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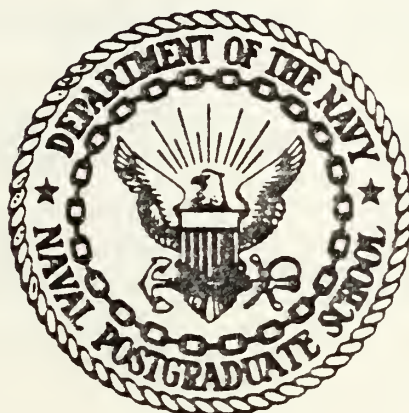
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NAVAL POSTGRADUATE SCHOOL

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THESIS

BUDGET FORMULATION AND APPORTIONMENT
OF THE SHIPBUILDING AND CONVERSION,
NAVY (SCN) APPROPRIATION

by

Arthur L. Ebright

March 1977

Thesis Advisor:

J. D. Buttinger

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Budget Formulation and Apportionment
of the Shipbuilding and Conversion,
Navy (SCN) Appropriation

by

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Submitted in partial fulfillment of the
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March 1977

ABSTRACT

The budget process is the final phase in the Planning, Programming and Budgeting System (PPBS). It is divided into three phases: Formulation, Justification and Execution. Of specific interest within the budget process is the Shipbuilding and Conversion, Navy Appropriation (SCN).

This thesis describes the SCN budget formulation process along with the interaction of the Shipbuilding Cost Adjustment (SCA) review. The budget process for SCN is traced through to the President's budget and the Congress where the second phase, justification, occurs. After Congressional approval, the SCN appropriation is traced through the execution phase where Congressionally-appropriated funds are obligated and expended. Finally, some conclusions are made with respect to cost estimating and the SCN budget process.

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TABLE OF ABBREVIATIONS

ASD(C)	Assistant Secretary of Defense (Comptroller)
ASD(I&L)	Assistant Secretary of Defense (Installation & Logistics)
ASD(PA&E)	Assistant Secretary of Defense (Program Analysis & Evaluation)
ASN(FM)	Assistant Secretary of the Navy (Financial Management)
BLS	Bureau of Labor Statistics
CBO	Congressional Budget Office
CEB	Chief of Naval Operations Executive Board
CER	Cost Estimating Relationship
CNM	Chief of Naval Material
CNO	Chief of Naval Operations
DASD(C)	Deputy Assistant Secretary of Defense (Comptroller)
DCP	Decision Coordinating Paper
DDR&E	Director of Defense Research & Engineering
DNPP	Director, Navy Program Planning
DOD	Department of defense
DPPG	Defense Policy & Planning Guidance
DSARC	Defense System Acquisition Review Council
FCC	Future Characteristic Change
FYDP	Five Year Defense Plan
GAO	General Accounting Office
GFM	Government Furnished Material
JCS	Joint Chiefs of Staff

JFM	Joint Force Memorandum
JIEP	Joint Intelligence Estimate for Planning
JSOP	Joint Strategic Objectives Plan
JSPS	Joint Strategic Planning System
NavCompLia	Navy Appropriations Committee Liaison Office
NAVCOMPT	Comptroller of the Navy
NAVMAT	Naval Material Command
NAVSEA	Naval Sea Systems Command
NAVSHIPS	Naval Ship Systems Command
NCB	Director of Budget and Reports, NAVCOMPT
NMC	Naval Material Command
OLA	Office of Legislative Affairs
OMB	Office of Management and Budget
OPNAV	Office of the Chief of Naval Operations
OSD	Office of the Secretary of Defense
PBD	Program Budget Decision
PDM	Program Decision Memorandum
POM	Program Objective Memoranda
PPBS	Planning, Programming and Budgeting System
PPGM	Planning and Programming Guidance Memorandum
SAIC	Ship Acquisition Improvement Council
SCA	Ship Cost Adjustment
SCN	Shipbuilding and Conversion, Navy Appropriation
SECDEF	Secretary of Defense
SHAPM	Ship Acquisition Project Manager
SSPO	Strategic Systems Project Office

I. INTRODUCTION

The Federal budget process today is considered to be lengthy, time consuming, often disorderly, plagued with last minute decisions, and filled with frustration. Over the years, recommendations and improvements have been made, but solutions to problems posed by the budget seem to become more complicated and difficult with each passing year. Nowhere have these problems become more evident than in the Shipbuilding and Conversion, Navy (SCN) appropriation, with inflation, contract escalation and characteristic changes being just a few of the problems confronting those who prepare the budget.

The process of developing the SCN budget is one in which there is an interplay of a great many forces. Far-reaching decisions must be made each year regarding such matters as numbers, types and specific characteristics of ships to budget for, inflation, escalation and ship cost adjustments, just to name a few. Is it any wonder, therefore, that the process is complicated, and, at times, frustrating, particularly to those whose programs are cut or eliminated from the budget?

Perhaps the major improvement in budgeting in the Navy occurred when the necessity of a team approach was recognized to be essential in formulating an effective budget. The joint efforts of the planner, the programmer, and the budget analyst

plus the wisdom and foresight of those in command to formulate a budget have now been used in a Planning, Programming, and Budgeting System (PPBS). This thesis will address the final phase of this system with respect to the Shipbuilding and Conversion, Navy appropriation.

A. SCOPE OF THE THESIS

The budgeting process for the Shipbuilding and Conversion, Navy (SCN) appropriation consists of three phases, formulation, justification and execution. The process begins with initial budget guidance from various Department of Defense offices and the Office of Management and Budget (OMB). Subsequently, SCN budget initiation begins with the Ship Acquisition Project Managers (SHAPMs) and the Naval Sea Systems Command (NAVSEA). The resultant budget is transmitted up through various Department of Defense offices for review and approval prior to being included in the President's budget. Budget review continues through the Congress as the Armed Services and Appropriations Committees of both Houses conduct hearings in the long process of authorization and appropriation. The ultimate goal is the passage of the Appropriations Act which sets the limit as to how much the Department of Defense can obligate under specified programs including the SCN appropriation. With the passage of the Appropriations Act, the budget execution phase commences with apportionment and allocation of funds to various programs and budget activities. This thesis will describe the entire budgeting process with respect to the Shipbuilding and Conversion, Navy

(SCN) appropriation. The hope is for the reader to gain from one source, this thesis, a better understanding of how the SCN budget formulation and apportionment process works.

Repeated reference is made throughout this publication to a wide variety of Department of Defense offices and documents with long titles. This has made it necessary to use acronyms for convenience and hopefully for ease of reading. A complete list of those acronyms used is provided in the front of the thesis for easy reference.

B. THE PLANNING, PROGRAMMING AND BUDGETING SYSTEM (PPBS)

The Defense Reorganization Act of 1958 gave the Secretary of Defense, under the policy guidance and direction of the President and the National Security Council, two distinct lines of authority. A direct line of command was established through the Joint Chiefs of Staff to the Unified and Specified commands. A line for administrative control of the military departments and for management of support of military forces was established through the Secretaries of the Military Departments. Through the command line of authority, the Secretary of Defense issues decisions regarding threat appraisal, strategy, and forces. Through the administrative or management line of authority, he issues decisions regarding program goals to support the forces and budgeting of annual funds to support the programs. The process through which these decisions and resultant action are integrated is the Department of Defense Planning, Programming and Budgeting System (PPBS).

The PPBS concept was developed and installed by Charles J. Hitch, the Assistant Secretary of Defense (Comptroller) ASD(C), under the Secretary of Defense, Robert McNamara, and formed the basis for the FY 63 DOD budget [21: p. 52]. It was a revolutionary change, introducing the concept of programming as a bridge between the already well established functions of military planning and budgeting.

The Planning, Programming and Budgeting System can be considered to consist of three separate and distinct phases-- a planning phase, a programming phase and a budgeting phase. The planning phase consists of global threat assessment and a definition of the strategy to meet that threat. The programming phase translates the strategic plans into alternative force structure programs defined in terms of men, material and financing. The budgeting phase expresses the programs in annual funding requirements.

The Department of Defense PPBS organization and procedures are embodied in DOD Instruction 7045.7. The DOD PPBS operates on an 18-month cycle, but the system is recycled annually and an overlap results with budgeting for one year, programming for the following year and planning for the succeeding years, all occurring simultaneously. The cycle involves the following basic steps, the timing of which is promulgated by the Secretary of Defense annually in the Program/Budget Review Schedule [56: p. I-1].

1. JCS submit JSOP Vol. I (Strategy) to SECDEF. This document is a basic statement by the JCS of their recommended military strategy. It contains military

objectives and appraisals, force planning guidance and evaluation of associated military risks.

2. SECDEF issues Defense Policy and Planning Guidance (DPPG), a statement of broad strategic guidance for defense planning.
3. SECDEF issues Material Support Planning Guidance (MSPG), a tentative five-year fiscal guidance, to the DOD components for comment.
4. JCS submits JSOP Vol. II (Forces) to SECDEF based on strategic guidance of JSOP I and the Defense Policy and Planning Guidance. This plan is not fiscally constrained, but presents what is needed and what can be attained. Requirements are identified and objective forces are recommended.
5. SECDEF issues Planning and Programming Guidance Memorandum (PPGM). This provides applicable modifications to those documents previously mentioned and fiscal guidance to the DOD components by major force and support categories for each of the five program years.
6. JCS submits Joint Force Memorandum (JFM) to SECDEF. The JFM includes force and resource recommendations, rationale and risk assessments. It is fiscally constrained consistent with SECDEF fiscal guidance in the PPGM.
7. Military Departments/Defense Agencies submit Program Objective Memoranda (POM) to SECDEF. This includes forces and support with rationale and risk assessment. The POM is also fiscally constrained consistent with SECDEF fiscal guidance contained in the PPGM.
8. SECDEF issues final Program Decisions after reclama to these decisions have been submitted by the DOD components.
9. DOD Departments and Agencies submit budget estimates for the budget (fiscal) year.
10. SECDEF issues the Program Budget Decision (PBD).

Further and more precise definitions of planning and programming documents can be found in the Department of the Navy Programming Manual.

1. Planning Phase

Planning, the first phase of the PPBS, starts with the assessment of the threat to the security of the United States and, when combined with national policy, culminates in the development of force objectives to assure the security of the United States. The force objectives are limited to forces in being and capabilities of research and production to provide forces in the future.

The major portion of the planning effort is accomplished within the Joint Chiefs of Staff area. The civilian officials of the Military Departments have no assigned or assumed responsibility in this phase of the PPBS.

In the context of the PPBS annual cycle, planning is initiated with the submission of the Joint Strategic Objectives Plan (JSOP) Vol. I by the JCS. However, planning within the JCS and Military Services has its beginning with the Joint Intelligence Estimate for Planning (JIEP). The JSOP and JIEP, together with other JCS strategic planning documents, collectively comprise the Joint Strategic Planning System (JSPS).

The planning concept is to assess the world situation at prescribed future time periods, technical capabilities required, military strategy to counter threats to the national security and to state objectives to satisfy the national strategy. Figure 1 shows the relative relationship of planning documents with an associated time frame [15: p. 15].

The planning phase starts in May of each year with the issuance by JCS of the Joint Strategic Objectives Plan (JSOP) Vol. I. In August the President normally issues his annual Foreign Policy Guidance. This is followed in September by the Defense Policy and Planning Guidance (DPPG) issued by SECDEF. In October the Office of the Secretary of Defense (OSD) provides the JCS and DOD Components an opportunity to comment on the DPPG, in the event that there are major differences in military objectives or in threat appraisals. By December the next major link in the planning phase is joined with the annual promulgation of the updated JSOP Vol. II, which reflects the modifications made in the DPPG.

The planning phase can logically be considered to end in February or early March with the Secretary of Defense's promulgation of his Planning Programming Guidance Memorandum (PPGM). This document provides for modifications and additions to the Policy and Force Planning Guidance contained in the DPPG, Material Support Planning Guidance, fiscal guidance, POM submission guidance and other additional planning guidance as may be required. This guidance further provides the framework around which the Joint Chiefs of Staff, Military Departments and Defense Agencies develop their fiscally constrained programs.

2. Programming Phase

Programming, the second phase of the PPBS, translates approved concepts and objectives, prepared during the planning phase, into a definitive structure expressed in terms of

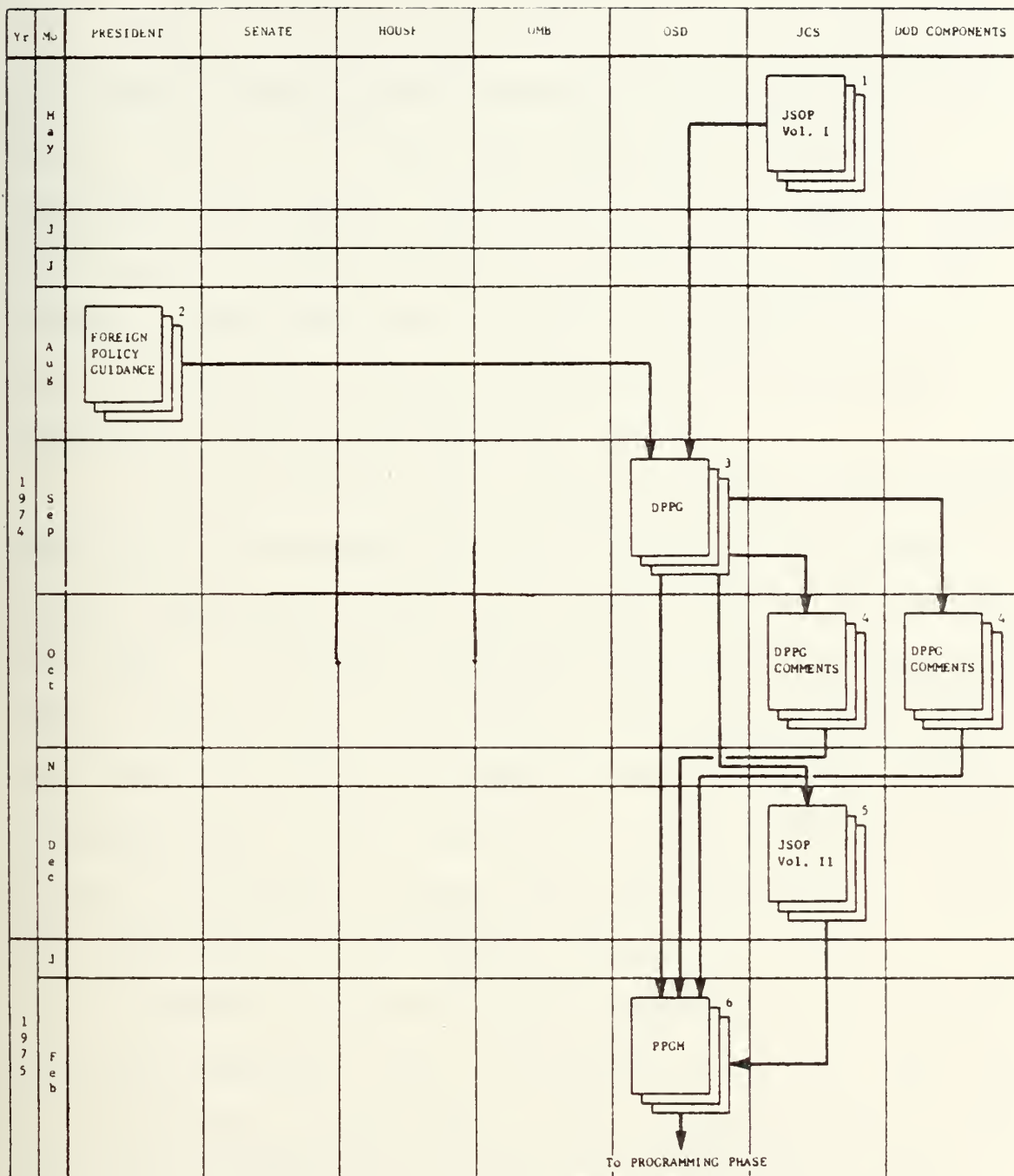


Figure 1 - Planning Phase

time-phased resource requirements including personnel, monies and material. This is accomplished through systematic approval procedures that "cost out" force objectives for financial and manpower resources five years into the future, while at the same time displaying forces for an additional three years. This gives the Secretary of Defense, the Congress and the President an idea of the impact that present day decisions have on the future defense posture. Figure 2 shows the relative relationship of programming documents with an associated time frame.

The programming phase commences early in the calendar year with the promulgation of the Planning and Programming Guidance Memorandum (PPGM) mentioned at the end of the planning phase. In May the JCS submits the Joint Force Memorandum (JFM) to the Secretary of Defense. This memorandum represents the views of the JCS as a corporate body concerning forces developed under fiscal constraints. The JFM force recommendations, procurement programs and risk assessments are developed from inputs by the Service Chiefs.

The JFM is followed almost immediately by the individual DOD Components' POM. The Department of the Navy POM is the Secretary of the Navy's annual recommendation to the Secretary of Defense for the detailed application of the Department of the Navy resources. The Secretary of Defense reviews the POM, and as a result issues a series of tentative Program Decision Memoranda for review and comment by the JCS and DOD Components. After review and appraisal by the OSD,

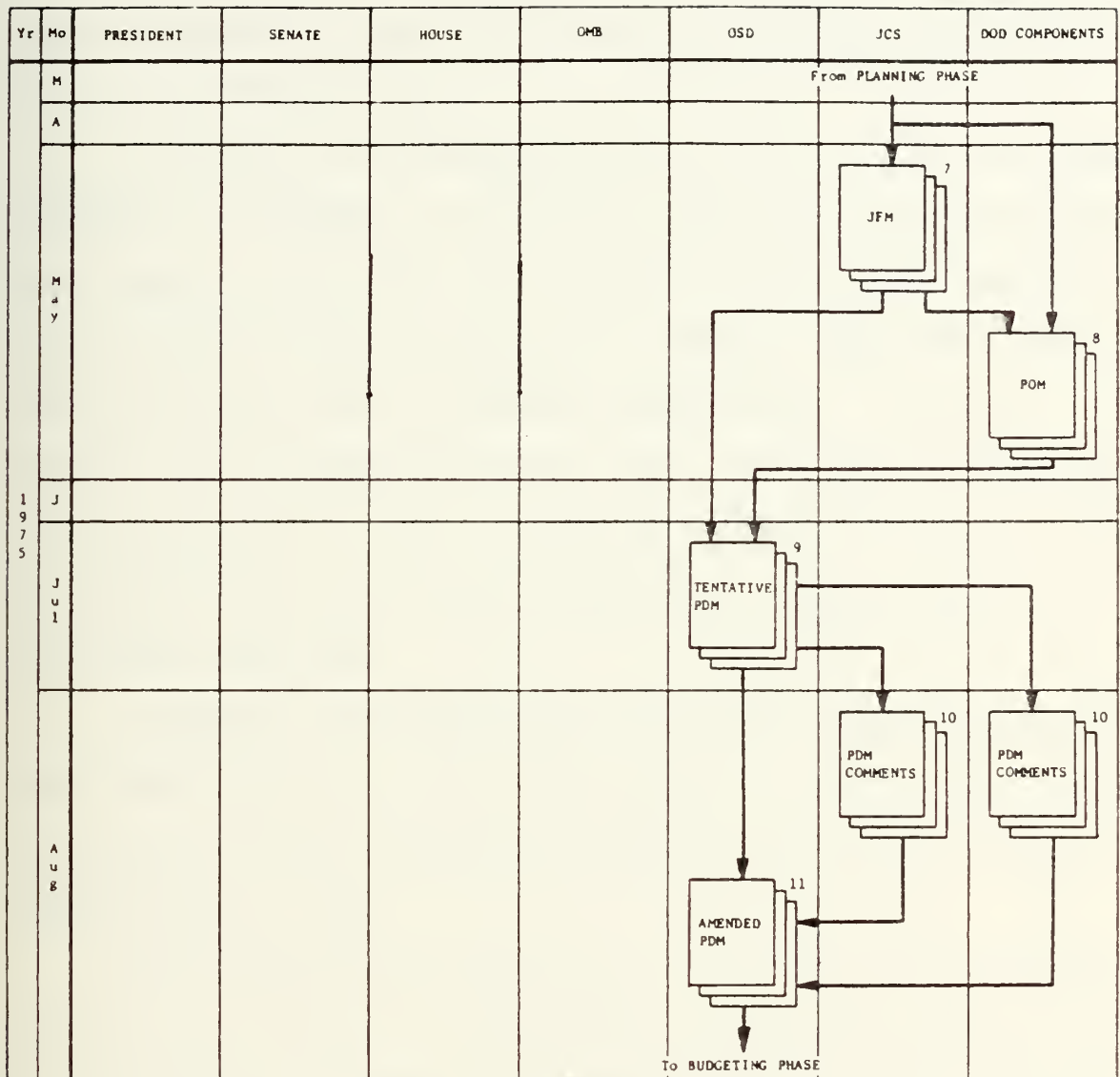


Figure 2 - Programming Phase

the POM is forwarded to the SECDEF for final approval. Thus, the POM, as modified by the Program Decision Memorandum, is then reflected in the Five-Year Defense Plan (FYDP) as the approved program. This is the base program for the development of the annual budget.

The FYDP is formulated annually on the basis of SECDEF decisions in response to the POMs submitted by the military departments. The FYDP is the summary of the approved Five-Year programs of all Department of Defense components (military departments plus the defense agencies). The FYDP projects force requirements for eight years and manpower and cost data for five years. It is the official program of the Department of Defense and is updated as changes occur in accordance with PPBS.

Separate management classifications exist between the major programs of the FYDP and the major mission and support categories of the programming documents. They are listed in Figure 3 [21: p. 56].

The question now arises as to how are these programs and missions related to the budget and military effectiveness? The Department of Defense developed a cube, shown in Figure 4, that depicts these relationships. It allows comparative analysis within missions and relates the Major Programs of the Five-Year Defense Program (FYDP) to material management categories (ships, planes, missiles, manpower and support activities) and to the appropriations structure [21: p. 51].

MANAGEMENT CLASSIFICATIONS

Major Programs (used in FYDP)	Major Mission & Support Categories (used in SECDEF Fiscal Guidance, JFM, POM, PDM)
1. Strategic Forces	Strategic Forces
2. General Purpose Forces	Land Forces Tactical Air Forces, Navy
3. Command, Control & Communications	Tactical Air Forces, Marine Corps ASW & Fleet Air Defense Forces
4. Airlift & Sealift	Amphibious Assault Forces Naval Support Forces
5. Guard & Reserve Forces	Mobility Forces Intelligence & Security
6. Research & Development	Communications Research & Development, Navy
7. Central Supply & Maintenance	Research & Development, Marine Corps Support to Other Nations
8. Training, Medical & Other General Personnel Activities	Base Operations Medical Support
9. Administration & Associated Activities	Personnel Support Military Family Housing
10. Support of Other Nations	Command Logistics Miscellaneous Cost Geophysical Activities Force Support Training Individual Training

Figure 3 - Major Programs vs. Major Mission
and Support Categories

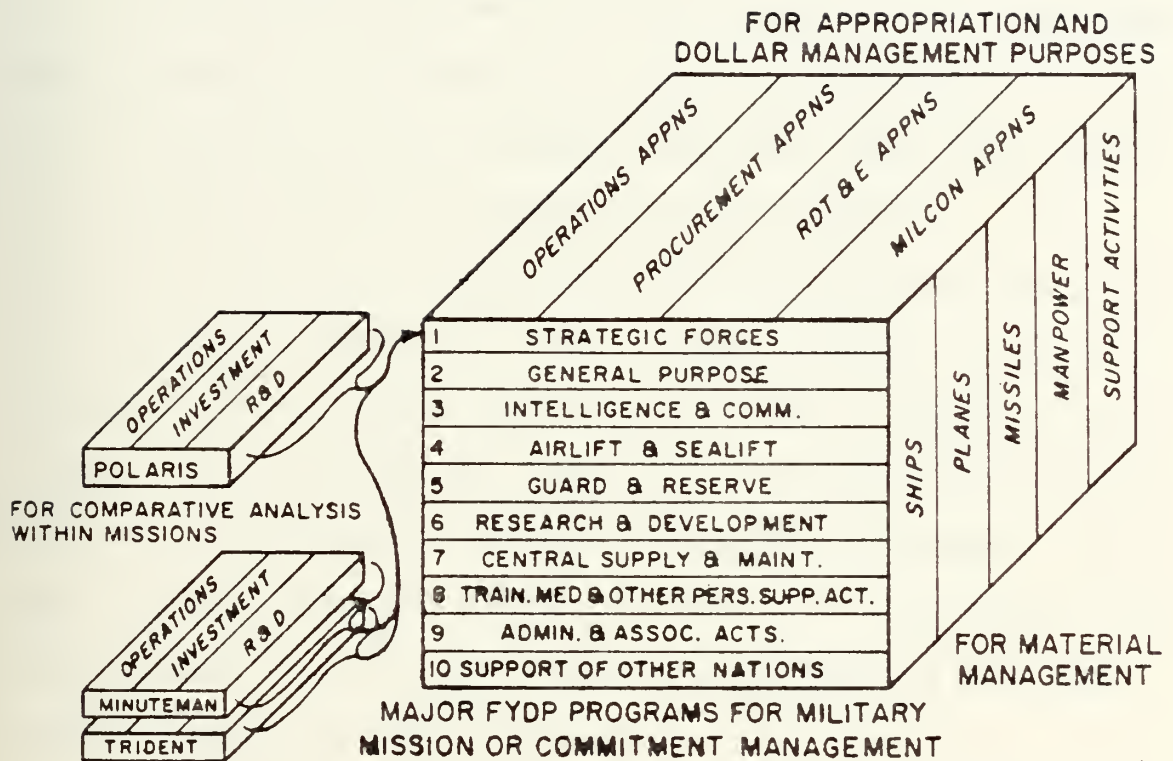


Figure 4 - Concept of DOD Programming System.

The SCN appropriation overlaps several major FYDP programs including Strategic Forces and General Purpose Forces, and falls into the area where the material management category of ships crosses into the procurement appropriations.

3. Budgeting Phase

The final phase of the PPBS is budgeting. The annual budget expresses the financial requirements necessary to support the approved Navy programs which were developed during the preceding phases of planning and programming. The approved programs are those which evolve from incorporating all decision documents received through a predetermined date announced by the annual Program/Budget review schedule memorandum. It is through the budget that planning and programming are translated into annual funding requirements. Each year's budget estimate, therefore, sets forth precisely what the Department of the Navy expects to accomplish with the resources requested for that year.

The budget process is divided into three phases -- formulation, justification and approval, and execution. Figure 5 shows the relative relationship of budgeting documents and procedures with an associated time frame.

Budget formulation includes planning and developing the budget for the fiscal year which will commence one year from the next 1 October. The formulation phase begins when the Comptroller of the Navy issues a call for budget estimates from the DOD Components. This call is based on guidance

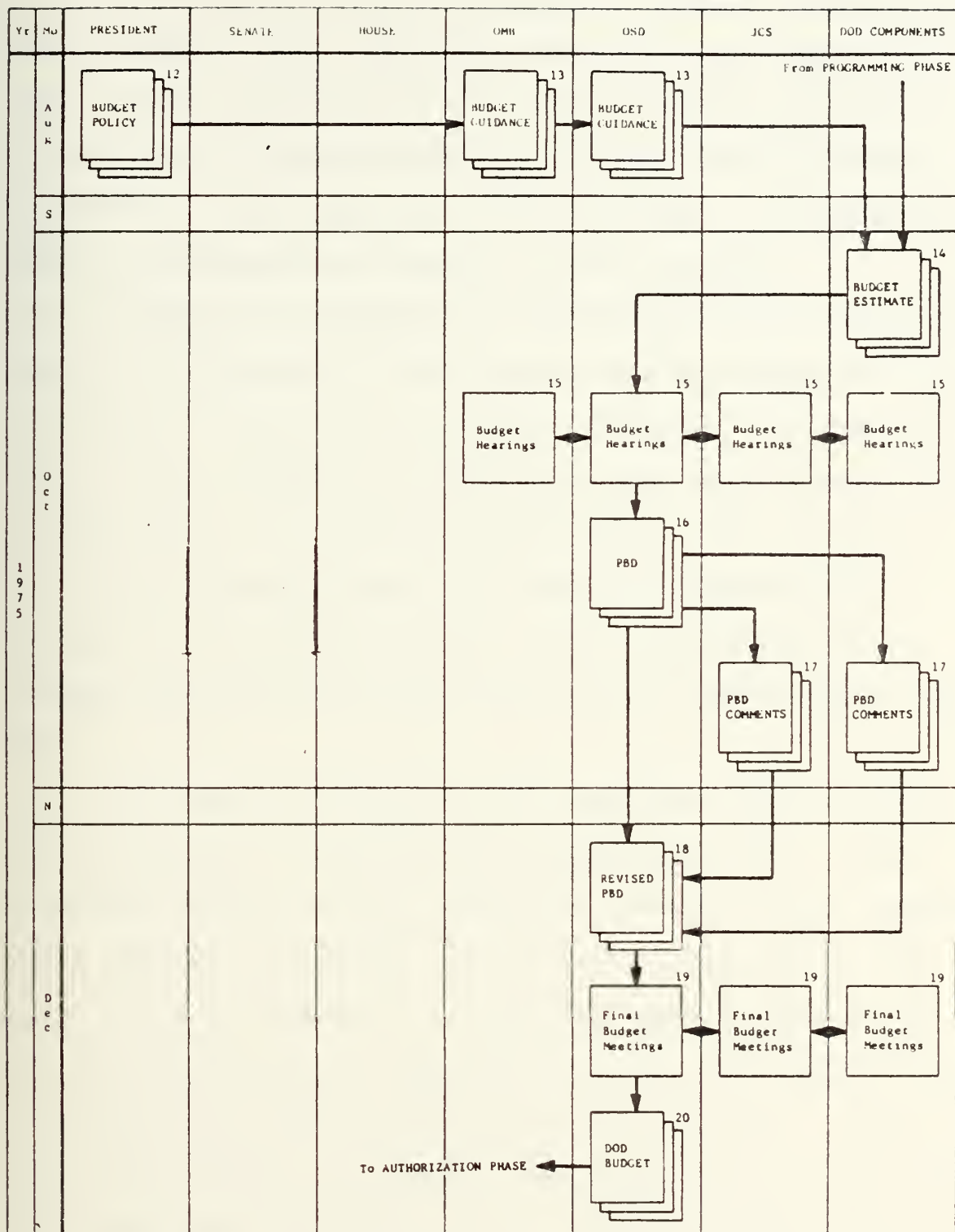


Figure 5 - Budgeting Phase

received from the Assistant Secretary of Defense (Comptroller), ASD(C), about 1 June. The phase continues with budget initiation, review, modification and approval of the estimates at all echelons of the Department of the Navy and with review, amendment and final approval by the Secretary of Defense, the Office of Management and Budget and the President.

Budget justification and approval includes presentation and justification to the Congress of the budget for the fiscal year. DOD Components must be prepared to explain and support their estimates to those who review and evaluate the programs and their financial requirements. This particular part of the budgeting phase will result in Congressional passage of an authorization bill for the authorization of programs and an appropriation bill for the appropriation of funds.

It should be noted at this time that annual authorizing legislation is required for appropriations for: major procurement items (aircraft, missiles, naval vessels, tracked combat vehicles, torpedoes, other weapons); research, development, test and evaluation; authorized personnel strength of the selected Reserve components; and for the authorization of the military construction program [56: p. IV-6]. Authorizing legislation is prepared by the Armed Services Committees of the House and the Senate and the appropriation legislation by the Defense Sub-committees of the House and the Senate appropriations Committees. Authorization and Appropriation with respect to the SCN appropriation is covered in more detail later in this thesis.

Budget execution is the obligation and expenditure of Congressionally-appropriated funds for the current and prior fiscal years. Budgets are formulated, justified and executed on the basis of appropriations. Appropriations are subdivided into budget activities, sub-heads, programs, projects, etc. The format and structure of the various appropriations are controlled by Congress and represent the manner in which Congress desires the agencies and departments to express requirements for funds.

The specific topic of this thesis is the Shipbuilding and Conversion, Navy (SCN) appropriation. Every phase of the budgeting process will be addressed with respect to the SCN appropriation to gain a better insight into how it operates.

C. THE BUDGET ACT OF 1974

Setting the framework for reasserting Congressional control over government spending, Congress, on 21 June 1974 enacted the Congressional Budget and Impoundment Control Act of 1974, (HR 7130 - PL 93-344) [5: p. 145]. This Act revised and elaborated the procedures by which Congress considers the federal budget. The budget reform bill was designed to force Congress into more measured and timely action on budgetary legislation, tying its separate spending decisions together with fiscal policy objectives in a Congressionally-determined budget package. Congress now has to adopt a budget resolution setting target figures for total appropriations, total spending and appropriate tax and debt levels before acting on appropriations and spending measures.

The law established budget committees in both of the Houses of Congress and it created a Congressional Budget Office. The House Budget Committee was initially composed of 23 members, but today it has 25 members. Assuring that existing House committees concerned with budgetary matters would be represented on the Budget Committee, the bill assigned five seats to the Ways and Means Committee members and five seats to the Appropriations Committee members. The remaining seats would be occupied by one member from each of the eleven legislative committees, and by one member from the majority leadership. Membership and the chairmanship rotate from Congress to Congress.

The Senate Budget Committee consists of 15 members. Both members and chairman are permanent, with members often giving up other committees to serve on the Budget Committee.

The responsibilities of the Budget Committees include: formulating and reporting the budget resolutions, mentioned above, to their respective Houses; recommending appropriate levels of federal revenues and expenditures to include proposed increases and decreases; and determining the appropriate level of public debt and whether the statutory limit on the public debt should be increased or decreased.

The primary duty and function of the Congressional Budget Office is to assist the Congressional budget committees by providing information, data and analysis. Assistance in budgetary and budget-related areas is also provided to all other committees and Congressional members upon request.

The Budget Act of 1974 further adopted a requirement of authorization legislation prior to the beginning of the fiscal year. It also established a detailed timetable setting deadlines for floor action on various spending measures. To fit the expanded budget-making procedures into the yearly Congressional session schedule, the bill shifted the federal government onto an October 1 - September 30 fiscal year. The new Congressional budget schedule for a fiscal year is shown below [18: p. 7-8].

November 10	The President submits current services budget. This is a projection of the monetary requirements of the federal government for the next fiscal year assuming that all existing programs continue at the same level and new programs are not initiated.
15th day after Congress meets	The President submits a new full budget for the next fiscal year and projections for the four succeeding fiscal years.
March 15	Committees and joint committees submit reports to budget committees.
April 1	Congressional Budget Office submits report to budget committees.
April 15	Budget committees present first concurrent resolutions on the budget to their Houses.
May 15	Committees present bills and resolutions authorizing new budget authority. Requests for authorization for new budget authority to continue a program for a fiscal year must be submitted to Congress no later than 15 May of the year preceding the year in which the fiscal year begins. Requests for fiscal year 1978 which starts 1 October 1977 must be submitted to Congress by 15 May 1976. If the request is for a new program which will last more than one fiscal year, the authorization level for the first two fiscal years of operation must be identified.

May 15	Congress completes action on the first concurrent resolution on the budget.
7th day after Labor Day	Congress completes action on bills and resolutions providing new budget authority and new spending authority. Congress should approve appropriations bills by this date.
September 15	Congress completes action on second required concurrent resolution on the budget.
September 25	Congress completes action on reconciliation bill or resolution, or both, implementing second required concurrent resolution.
October 1	The fiscal year begins.

II. STRUCTURE OF THE SCN BUDGETING PROCESS

The structure of the SCN Budgeting Process is depicted in Figure 6. In general, it follows very close to the budgeting phase discussed previously. In this chapter, however, a more detailed discussion of the budgeting process with respect to the SCN appropriation will be presented.

A. THE SCN PROGRAM

The Shipbuilding and Conversion, Navy program is developed from a series of planning and programming actions which originate within the Office of the Chief of Naval Operations. These actions leading to the development of the SCN appropriation are a portion of the total Navy planning and programming system, responsive to the Joint Program for Planning and the Department of Defense Programming System. Upon approval of the Shipbuilding and Conversion program, it is included in the DOD Five-Year Defense Program, which is a summation of all DOD components' approved programs.

1. Purpose

The appropriation, Shipbuilding and Conversion, Navy, finances the construction of new ships and the conversion of existing ships, including all hull, mechanical and electrical equipment, electronics, guns, torpedo and missile launching systems and communications systems [45: p. 4-112]. It also finances procurement of long lead time items for ships for which authorization will be requested in the following

PROGRAMMING, BUDGET FORMULATION AND BUDGET EXECUTION ACTIVITIES APRIL 1976 TO OCTOBER 1977

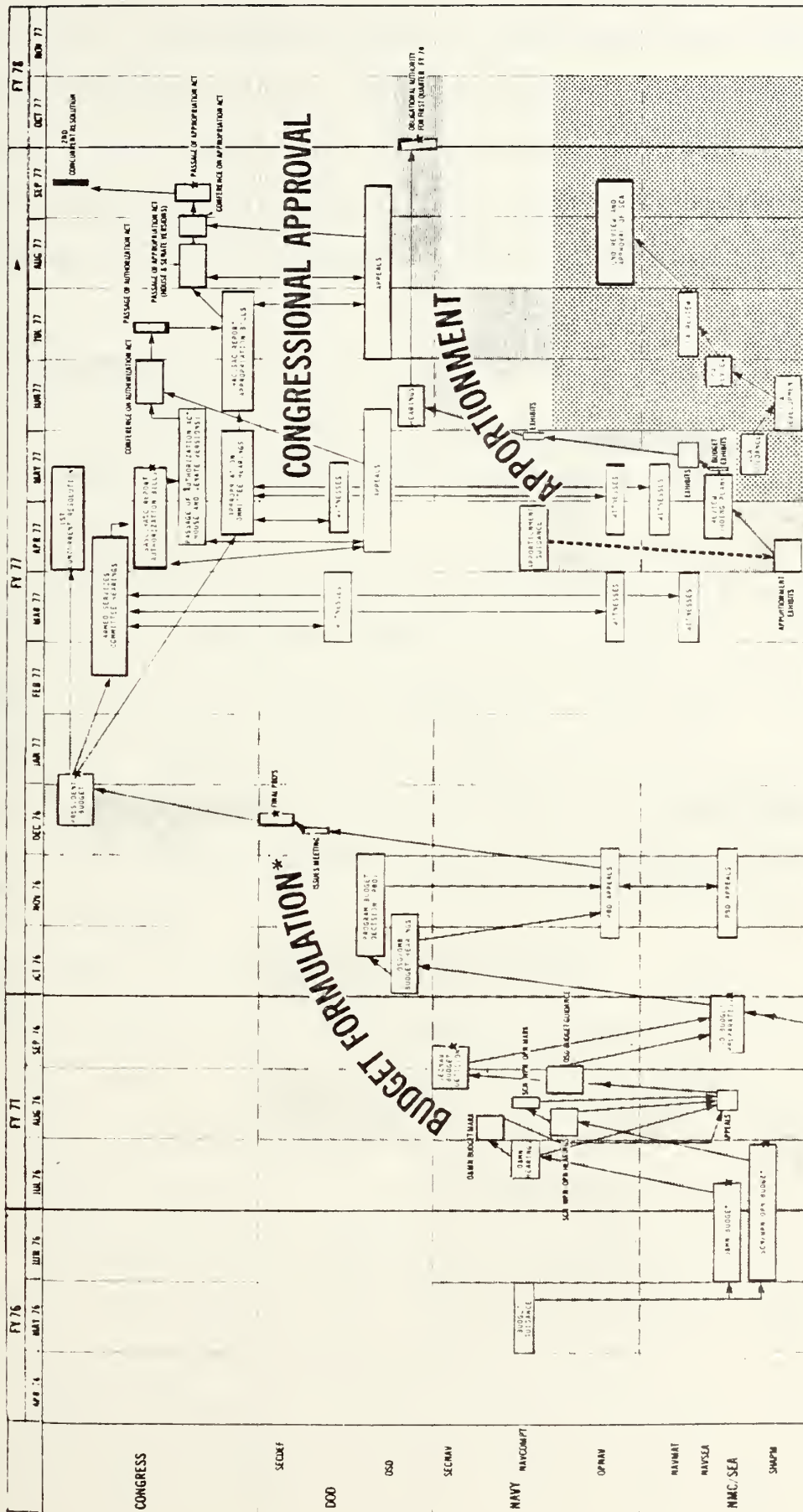


Figure 6

fiscal year. The appropriation is subdivided into five budget activities, each of which relates to a general class of ships. Each budget activity is further divided into projects which are the equivalent of each procurement line item (Exhibit P-1 line item) for which funds have been budgeted.

2. Structure

The SCN appropriation, as a part of the procurement budget category, is divided into five budget activities [45: p. 4-112].

Budget Activity 1 is Fleet Ballistic Missile Ships. Budget Activity 1 provides funds for the acquisition and conversion of ballistic missile submarines, including Polaris, Poseidon and Trident, and ships required for their direct support, such as tenders and cargo ships. Outfitting and post delivery requirements for ships in this budget activity are also included.

Budget Activity 2 is Other Warships. Budget Activity 2 includes funds for aircraft carriers, cruisers, frigates, destroyers, attack submarines and other warships as assigned by the Chief of Naval Operations.

Budget Activity 3 is Amphibious Ships. Budget Activity 3 includes funds for amphibious assault ships, dock landing ships, tank landing ships, amphibious transport dock ships and other ships as may be assigned by the CNO.

Budget Activity 4 is Mine Warfare and Patrol Ships. Budget Activity 4 includes funds for minesweepers, gun boats,

destroyer escorts, patrol craft, and other ships as may be designated by the CNO.

Budget Activity 5 is Auxiliaries and Craft. Budget Activity 5 includes funds for ammunition ships, store ships, surveying ships, replenishment oilers, tenders, landing craft, barges and other ships and craft as may be assigned by the CNO. Funds are also included for outfitting and post delivery for ships in this budget activity and in Budget Activities 2, 3 and 4.

B. THE PLAYERS

There are three basic players in the SCN budgeting process. The Department of Defense formulates the budget, makes program adjustments as required and executes the budget by using those funds appropriated. The Executive Branch receives the DOD budget after the final Program Budget Decision to adjust as appropriate and to approve before submitting the final document to Congress. The Congress, through many hearings and two budget resolutions, provides final approval to the budget. It also authorizes specific programs and is responsible for appropriating the funds required to finance appropriations such as the SCN appropriation.

1. Department of Defense

The Department of Defense uses five basic organizations in the SCN budgeting process. Each organization has its own responsibilities and each is further subdivided into major individual participants within the process.

a. Office of the Secretary of Defense

The major individual participants in the SCN budgeting process in the Office of the Secretary of Defense (OSD) are the Secretary of Defense, the Secretary of the Navy, the Assistant Secretary of Defense (Comptroller) ASD(C), the Deputy Assistant Secretary (Program/Budget) and the Defense System Acquisition Review Council (DSARC). Figure 7 is a diagram of the organizational relationship of the Office of the Secretary of Defense.

The Secretary of Defense reviews, amends where appropriate and approves the budget by promulgating Program Budget Decisions (PMBs). He conducts hearings to consider apportionment requests and establishes an authorized obligation rate for each apportionment. The Secretary of Defense can also defer approved programs until later in the budget execution period. This can be used to restrict the flow of funds into the economy as well as to control programs by withholding funding authorization until complete justification is provided. He also has authority, with the approval of the Office of Management and Budget, to transfer funds from one appropriation to another if such transfers do not exceed statutory limits.

The Assistant Secretary of Defense (Comptroller) does the physical preparation of the Defense Budget and acts as a general watchdog over defense spending. He provides guidance to the Comptroller of the Navy when the annual call for budget estimates for the SCN appropriation is made to the

Chief of Naval Operations, Chief of Naval Material and the Naval Sea Systems Command. His primary assistant in carrying out these responsibilities is the Deputy Assistant Secretary (Program/Budget).

The Defense System Acquisition Review Council (DSARC) is not a direct link in the SCN budgeting process, but it does have an effect on it. The Council is made up of a group of OSD officials who, in essence, approve the advancement of a major weapons system from one phase of development to the next. The final review, DSARC III, must be favorably completed before a request for appropriations for that specific major weapons system will be approved. The members of the DSARC are the Director of Defense Research and Engineering (DDR&E), the Assistant Secretary of Defense (Installation and Logistics) ASD(I&L), the Assistant Secretary of Defense (Comptroller) ASD(C), and the Assistant Secretary of Defense (Program Analysis and Evaluation) ASD(PA&E). "The mission of the DSARC is to serve as an advisory body to the SECDEF on major defense system programs, to provide him with supporting information and recommendations when program decisions are necessary and to conduct management reviews on such programs at least once during their life cycle" [9]. In actual practice, the DSARC reviews the progress of each major program at each major milestone and either permits it to go on to the next phase of its development or holds it up for further work in the existing state.

b. Office of the Secretary of the Navy

Within the Navy, the Secretary ultimately is responsible for directing the Navy budget execution of the SCN appropriation and for making decisions as to ship types and force levels needed to carry out the Navy's mission and tasks. In the discharge of his responsibility he is assisted by civilian executive assistants. The detailed planning leading to these decisions and the development, implementation and execution of the approved shipbuilding programs are performed at various subordinate levels. Figure 8 is a diagram of the organizational relationship of the Office of the Secretary of the Navy and of the Chief of Naval Operations.

The Assistant Secretary of the Navy for Financial Management, ASN(FM), is designated as the Comptroller of the Navy. Under the ASN(FM), the Deputy Comptroller, in addition to his other duties, serves as an advisor and assistant to the Chief of Naval Operations and assists him in financial and budgetary matters. The Comptroller prescribes budget policies and procedures and provides guidance for the preparation of the budget in support of approved programs. He reviews budgets to insure adequacy of justification and consistency with approved programs and coordinates preparation of the Navy's budget estimates for submission, after review and approval by the Secretary of the Navy, to the Office of the Secretary of Defense, the Office of Management and Budget and the Congress. He also conducts a continuous review of the execution of approved budget plans and programs, and when

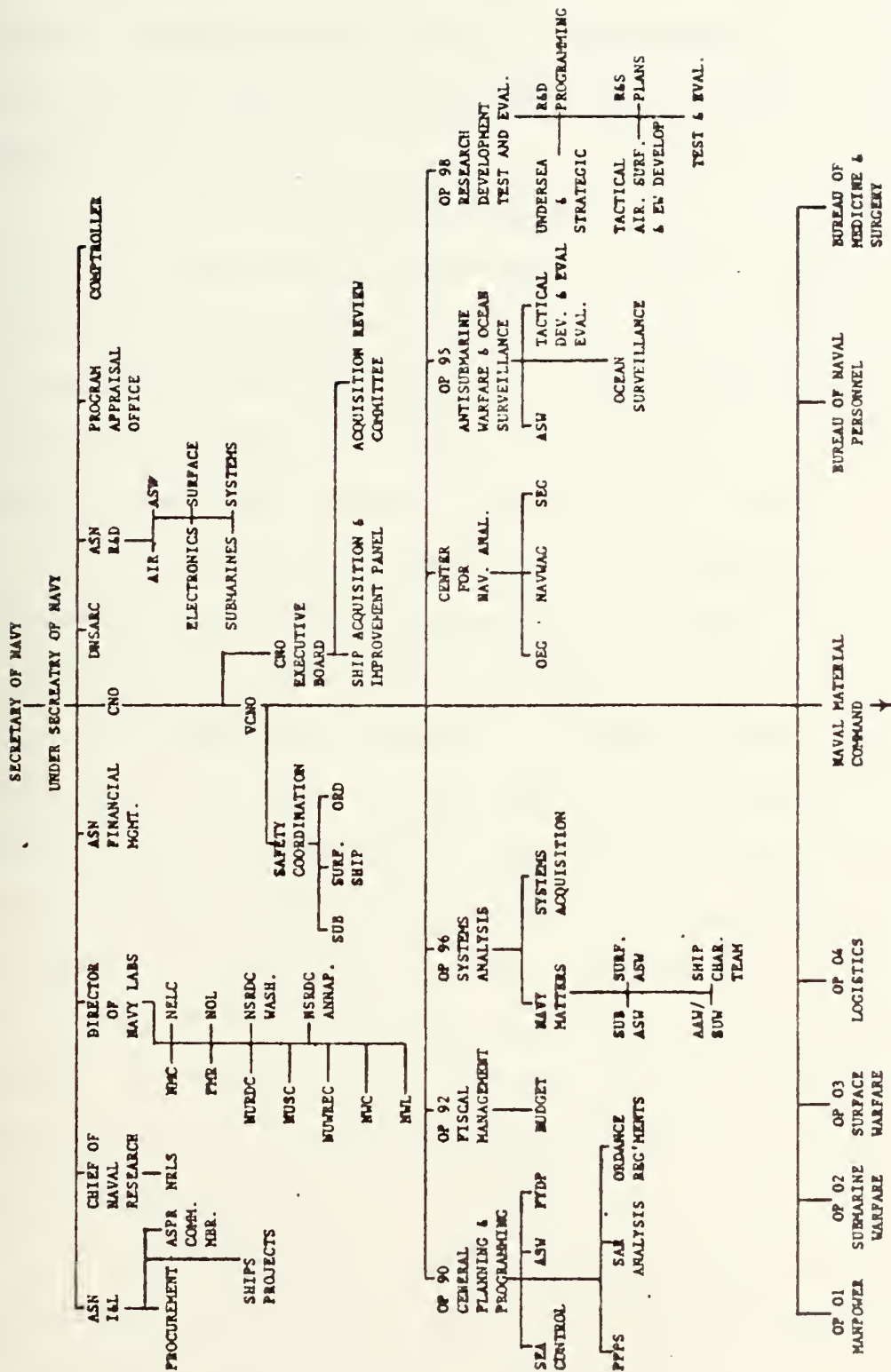


Figure 8 - Organization of the Secretary of Navy and Chief of Naval Operations

deviations from plans are revealed, he may make adjustments in funding levels. He further reviews and submits apportionment requests to the Office of Management and Budget, and allocates apportioned and other funds to the Systems Commands [21: p. 32].

c. Chief of Naval Operations

The CNO formulates Navy strategic plans in support of missions assigned to the Navy. He is also responsible for determining and directing the efforts necessary to fulfillment of current and future requirements of the Navy for manpower, material, weapons, facilities and services, including the determination of quantities, military performance requirements, and times, places and priorities of need. The basic functions of the CNO with respect to the development of the SCN budget are assigned to various organizational elements in his office. While many of these elements contribute to the planning and actions which result ultimately in the approved budget, the principal direct participants in this effort are found in the following offices: Director of Navy Program Planning (OP-090), Director of Fiscal Management (OP-092), the Deputy Chief of Naval Operations (Surface) (OP-03), the Ship Acquisition Division (OP-37), and the CNO Executive Board (CEB) [50: p. 090-3].

The Director of Navy Program Planning provides professional and technical advice in program/budget matters to the CNO. He also exercises centralized coordination within OPNAV in all Congressional matters pertaining to authorizations,

appropriations and Navy Programs. Support is provided to the CNO and the Secretary of the Navy in the preparation for and during Congressional testimony on the budget. He provides guidance and exercises coordination in the preparation and dissemination of CNO program/budget guidance [50: p. 090-3].

The Director of Fiscal Management translates program requirements into a financial plan and formulates the budget for the CNO. He acts as a principal point of contact for the CNO with the Comptroller of the Navy and subordinates of the CNO in matters concerning the budget and appropriations.

The Deputy Chief of Naval Operations (Surface), as the SCN appropriation sponsor, initiates policy guidance for planning and execution of the SCN Program [50: p. 03-3]. He reviews the status and performance of SCN funded programs, maintaining close liaison with appropriation fund administrators in the Naval Sea Systems Command. As the appropriation sponsor, he is the principal witness presenting SCN budget requests to the Congress.

The Ship Acquisition Division directs and coordinates, in conjunction with ship and program sponsors, all ship acquisition programs, including over-all program planning, ship formulation and characteristic development, and participates with the Chief of Naval Material in the development of effective procurement plans. Back-up for Congressional hearings is provided along with the consolidated fiscal year shipbuilding and conversion program.

SCN appropriation programming actions are initiated by this office and progress monitoring of ships under construction and conversion is also furnished. This division also serves as the point of contact and coordinator for processing SCN correspondence falling within the purview of OP-03 [50: p. 03-30]. Salient examples are initiating approval of characteristics or changes to characteristics, nominating priorities of accomplishing the SCN program or changes when required, evaluating cost estimates of future programs and adjustments to characteristics if required to attain reasonable estimates.

The CNO Executive Board (CEB) is comprised of the Vice CNO (Chairman), the Director of Navy Program Planning (Vice Chairman), the Deputy CNOs, the Directors of Major Staff Offices and the Chief of Naval Material. Other designated officials, including the Commanders of the Systems Commands, are associate members of the Board. The CEB considers all major strategy, force composition, organization, personnel policy and other equally important issues, and submits its recommendations to the CNO for decision [50]. The CEB also reviews the Navy Program objectives and the Navy budget and advises the CNO on program and budget implications, and recommends adjustments as necessary to fit approved strategic concepts, plans, policies and budgetary constraints.

Close coordination within OPNAV, primarily between the Ship Acquisition Division (OP-37) and the Director of Navy Program Planning (OP-90), is required to keep the CNO, VCNO,

the Director of Navy Program Planning and the DCNO (Surf) informed on SCN financial matters ensuring that all information necessary for the formulation of policy guidance is available.

d. Chief of Naval Material (CNM)

The staff of the Chief of Naval Material plays a significant role in the formulation process for the Navy's material programs. While the Naval Sea Systems Command is preparing estimates for the SCN appropriation, NAVMAT analysts provide continuing guidance for these programs to assure adequate coordination and coverage. Figure 9 is a diagram of the organization of the Chief of Naval Material.

The Naval Sea Systems Command and their designated project managers make summary presentations of budget estimates to the CNM before submitting them for formal review to NAVCOMPT and the CNO Fiscal Management Division (OP-92). The CNM staff reviews the submitted budget and assists in defending the budget during all reviews.

The line components of the Office of Naval Material consist of the CNM designated project managers, the Systems Commands, and the Naval Material Command Centers/Laboratories. The Systems Commands are the providers of weapons systems and support the fleet operating units. Although the SCN appropriation would seem to involve only the Naval Sea Systems Command and the Naval Supply System Command, the other Systems Commands provide missiles, electronics and test and support facilities.

The CNM designated Project Offices theoretically are temporary offices established by CNM to accomplish a specific task. In fact, although numerous project offices are established when a need is recognized and dissolved when the need no longer exists, several have been around for many years. The CNM Project Offices now in effect are: PM-1 (Strategic Systems), PM-2 (Trident), PM-4 (Anti-Submarine Warfare Systems), PM-18 (Surface Ships), PM-20 (Anti-Ship Missile Defense), and PM-21 (Security Assistance Project) [32: p. A-1].

The Surface Ships Project Manager (PM-18) is responsible for planning, direction, control and integration of all efforts within the Naval Material Command relating to surface ships [31]. He ensures that a total project budget is developed, maintained and properly justified. He has over-all control and responsibility for funds designated in the Navy's budget for the Surface Ships Acquisition Programs. The Ship Acquisition Project Managers in the Naval Sea Systems Command complement and support the functions of PM-18, particularly when performing as technical agent for PM-18, for their respective ship acquisition programs.

The Naval Material Command is presently undergoing reorganization, and it is expected that the designated Project Offices may be phased out. Details on the reorganization have not been finalized so the transfer of duties and authority of the Project Offices to other departments is unclear at this time.

e. Commander, Naval Sea Systems Command

On 10 May 1974, the Secretary of the Navy approved the consolidation of the Naval Ordnance Systems Command and the Naval Ship Systems Command, effective 1 July 1974 [33: p. 1]. The new organization was the Naval Sea Systems Command. Among the general duties and responsibilities of NAVSEA is the coordination of Shipbuilding, Conversion and Repair. NAVSEA also issues directions, as may be necessary, direct to other commands for needed materials and technical information for which they are responsible at specified shipbuilding and ship repair activities. Figure 10 shows a diagram of the Naval Sea Systems Command.

The Naval Sea Systems Command has three basic components most closely associated with the actual formulation of the budget for the SCN appropriation. They are the Plans, Programs and Financial Management/Comptroller Directorate (SEA 01), the Ship Acquisition Project Managers and the Budget Review Board.

The Plans, Programs and Financial Management/Comptroller Directorate provides over-all budget guidance, submits and justifies the budget, provides control numbers, allocates funds, establishes and submits obligation plans, establishes standard funding documents and procedures, accomplishes financial audit and policy review and coordinates the establishment of budgeted man-day rates for both Naval and private shipyards and budgeted material escalation factors [34: p. 1]. The major subdivisions of SEA 01 are

depicted in Figure 11. Of specific interest are the Budget and Programming Policy and Procedures Division (SEA 010), the SCN Appropriations Division (SEA 012), and the Cost Estimating and Analysis Division (SEA 01G). SEA 01G is not depicted on Figure 11.

The Budget and Programming Policy and Procedures Division is responsible for developing and issuing programming and budget policy, procedures and systems [34: p. 010/2]. They further determine financial jurisdiction among appropriations, establish and maintain Appropriations Charts of Accounts and represent SEA 01 on various study groups for budget and programming matters.

The Shipbuilding and Conversion, Navy (SCN) appropriation Division is responsible for reviewing and coordinating all financial input to Budget, Programming and Planning documents and systems, preparing and submitting budgetary exhibits, analyzing and reviewing the implementation of approved programs, and recommending program content, balance and changes to insure maximum utilization of available resources within his designated appropriation [34: p. 012/2].

The Cost Estimating and Analysis Division acts as the command focal point for all cost estimates including Life Cycle Costing, Economic Analysis and Should Cost. They provide a capability in house to perform Ship Acquisition Cost Estimating and Technical Cost Analysis. They further ensure that all cost estimates emanating from the Command are consistent, and they provide staff assistance and advice on cost estimating to all headquarters and field organizations.

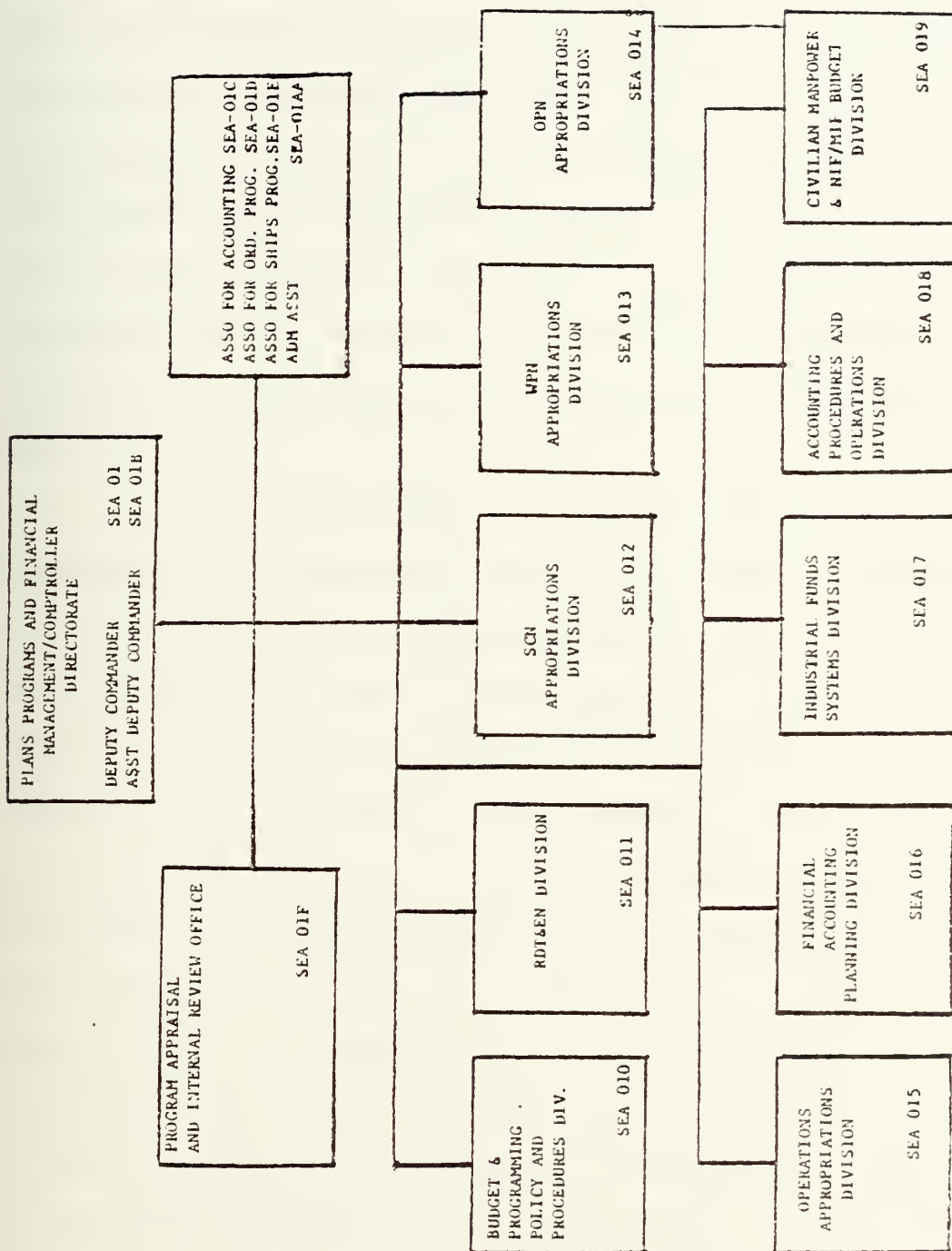


Figure 11 - Organization of the Plans, Programs and Financial Management/Comptroller Directorate

The Ship Acquisition Project Managers (SHAPMs) are shown on Figure 10. They supervise the design, construction, and conversion of assigned ships and craft and exercise authority of CNM for assuring total ship systems integration. They maintain financial plans that serve as a basis, to the extent practicable, for all financial planning and submissions required under the SCN program [42: p. 4]. These will include apportionments, budget submissions and SCA reviews. SCN funds are made available to SHAPMs for distribution to various performing activities by appropriate funding documents.

The Budget Review Board was established to provide programming and budgetary review at the Deputy Commander level prior to presentation to the Commander of the Naval Sea Systems Command. The Budget Review Board is responsible for reviewing all programming and budgetary submissions for the Shipbuilding and Conversion, Navy appropriation [35: p. 1]. The Board also reviews the following appropriations: Research, Development, Test and Evaluation, Navy; Weapons Procurement, Navy; Other Procurement, Navy; Operations and Maintenance, Navy; and Military Construction, Navy. The composition of the Budget Review Board includes SEA 09 as the Chairman, SEA 01, 03, 04, 06, 07, the Deputy Commander for Submarines, and the Deputy Commander for Surface Ships. Other Deputy Commanders are designated as members of the Board when programs under their respective cognizance are considered.

2. The Executive Branch

The Federal budget is often referred to as the President's budget. It represents his views and determinations. As finally approved, it is not the Navy's budget, or the budget of the Department of Defense. It is the President's, and its content may or may not be in accord with the views of top personnel within a particular department.

The President, with his assistants and the Cabinet, sets the policies to be followed in the make-up of the budget requests. He is further aided by the Office of Management and Budget, the Council of Economic Advisors, the National Security Council, the Office of Emergency Preparedness, the Office of Science and Technology and the National Council on Marine Resources and Engineering Development [46: p. vi]. Of all of these organizations, the Office of Management and Budget has the most direct effect on the budget.

The Office of Management and Budget (OMB) is directly involved with the budget review process before final submission to the President. After the budget reviews are completed the OMB combines the submitted DOD budget with all other Federal budgets and presents it to the President for final review and approval. The Office of Management and Budget provides general budget guidance in the form of Circular No. A-11. In making final decisions on the Defense budget, the President usually confers with the Director of the Office of Management and Budget, the Secretary of Defense, the Joint Chiefs of Staff and the National Security Council.

3. Congress

Article 1, Section 8 of the U.S. Constitution says, "The Congress shall have power to ... provide for the common defense and general welfare of the United States," "raise and support armies, but no appropriation of money to that use shall be for a longer term than two years" and "provide and maintain a navy." It also gives Congress the power "to make rules for the government and regulation of the land and naval forces." Based on these sections of the Constitution, the Congress not only provides the appropriations for the Department of Defense, but specifically dictates how this money shall be used.

a. Budget Committees

On 21 June 1974 Congress enacted the Congressional Budget and Impoundment Control Act. This Act established a House and Senate Budget Committee. The Budget Committees establish a ceiling on the funds to be budgeted for each government function. Budget resolutions are adopted to set target figures for total appropriations, total spending and appropriate tax and debt levels before Congress acts on appropriations and spending measures. These concurrent resolutions can be and generally are based on the budget from the President and modified as the House and Senate see fit; however, in concept, the Congress is now in a position to establish its own alternative budget.

b. Armed Services Committees

Annual authorizing legislation is required for appropriations for shipbuilding [56: p. IV-6]. Authorizing legislation is prepared by the Armed Services Committees of the House and Senate. This legislation establishes the maximum amounts that can be appropriated for the specified purpose or the personnel and training levels covered, but does not represent an appropriation nor convey obligational authority. Authorizations establish ceilings for quantities and for amounts to be appropriated by the Appropriations Committees.

c. Appropriations Committees

The Appropriations Committees of the House and Senate create the bills that provide the funding for all government operations, including shipbuilding. The Department of Defense Subcommittee begins the review of the Federal budget through a series of hearings to consider individual appropriation requests. Further reviews continue within the House and Senate Appropriations Committees until a final joint conference committee report is submitted to each House for final approval. Following passage by Congress, the bill, modified according to Congressional action on the conference report, is transmitted to the President for approval and signature. When the bill is signed, it becomes an effective Public Law called the "Department of Defense Appropriations Act."

d. Congressional Budget Office

The Congressional Budget Office (CBO) is charged with analyzing the current services budget and the President's budget and drafting each submittal of the budget resolution. They are additionally charged with analyzing the fiscal impact of all reported legislation and conducting long term studies for the Committees of Budget, Appropriations, Ways and Means and Finance. The Budget Office is "authorized to secure information, data, estimates and statistics directly from various departments, agencies and establishments of the executive branch of government and the regulatory agencies and commissions of the government" [4: Title II].

e. General Accounting Office

The General Accounting Office (GAO) considers itself to be, "... a non-political, non-partisan agency in the legislative branch of the Government created by Congress to act in its behalf in examining the manner in which Government agencies discharge their financial responsibilities with regard to public funds appropriated or otherwise made available to them by the Congress and to make recommendations looking to greater economy and efficiency in public expenditures" [14: p. 1]. GAO is empowered to audit and settle the accounts of executive officers, including the making of legal interpretations incident to these audits. The determinations of the Comptroller General, who is the head of GAO, are final and conclusive upon the Executive Branch [16: p. 139]. The other major function of GAO is to conduct investigations

at the behest of Congressional Committees and individual members [16: p. 149].

III. SCN BUDGET FORMULATION

A. BUDGET GUIDANCE

Because program budgeting requires initial guidance and direction from the highest authority, budget formulation begins at the highest executive level, the Presidency. In providing guidance to the Secretary of Defense, the President relies for advice upon his immediate staff agencies and other groups established to assist in the formulation of policy. Among the more important of these for budget purposes are the Office of Management and Budget (OMB), the Council of Economic Advisers and the National Security Council. Presidential guidance covers such broad areas as fiscal policy, economic assumptions and the general level of the military effort. That direction is given to the Secretary of Defense through the Office of Management and Budget.

1. Office of Management and Budget

The basic guidance published by OMB for the annual preparation and submission of budget estimates is Circular No. A-11. The Office of Management and Budget requires that "requests for major procurement programs will provide for the full financing of the entire cost" [47: p. 9]. The objective of the policy is to "provide funds at the outset for the total estimated cost of a given item so that the Congress and the public can clearly see and have a complete knowledge of the full dimensions and cost when it is first presented

for appropriation. In practice, it means that each annual procurement request must contain the funds estimated to be required to cover the total cost to be incurred in completing delivery of a given quantity of usable end items..." In addition, this "full funding" policy requires that funds be programmed and available to cover the best estimate of the cost of an item whenever any procurement funding action is initiated [55].

OMB provides further general budget guidance on style of presentation, summary information and program justification. OMB requires that all budget materials will be prepared on letter-size sheets (8 x 10-1/2 inches) with the exception of the 6- and 9-column program and financing schedules and the special fold-in charts and tables which each agency must submit [47: p. 16].

A summary memorandum will lead off the budget submission of each agency. This identifies the broad policies proposed, the objectives and program plans on which the estimates are based, and the total amounts requested to achieve the projected results. Written justification must be provided with each budget submission, to include supporting memoranda, related analytic studies, and quantified performance indicators, where appropriate, in explanation of major program issues and related changes in the estimates.

2. Department of Defense

Budget guidance in the Department of Defense is developed from the planning and programming phases of the

PPBS and is eventually based on the resulting Program Objectives Memorandum (POM). The POM is approved by SECNAV and is submitted to SECDEF in May of each year. The SECDEF reviews the POM and based on his review issues the Program Decision Memoranda (PDM). The Navy receives a PDM arranged by major mission and support categories, as discussed earlier in this thesis. Upon receipt, the PDM is promulgated within the Department of the Navy and this becomes the budget base. The approved POM also provides broad program planning guidance for budget submission.

The Office of the Assistant Secretary of Defense (Comptroller) publishes the Budget Guidance Manual to provide general guidance on the formulation and submission of the budget estimates to the Office of the Secretary of Defense, the presentation of the budget and Congressional justifications, the administration of the budget and budgeting and accounting classifications. Figure 12 shows the exhibits that are required for the preparation of material to support budget estimates and apportionment requests for the Shipbuilding and Conversion, Navy appropriation [37]. The actual exhibits are displayed in Appendix A. The object of this thesis is not to reprint the Budget Guidance Manual, so for further instructions the Manual can be referenced.

Since much of the budget guidance material formerly included in the annual "guidance" and "call" memoranda are now included in the Budget Manual, the Secretary of Defense guidance memorandum, transmitted in June or July of each year,

Figure 12

Summary Listing of Exhibits Required for the Budget and Apportionment Review of SCN

Exhibit	Title	Prepared by	Description/Remarks
P-1	Ship Procurement Program	012/SSPO	List each ship type, noting whether it is a conversion, the number of ships to be constructed, and the program estimate (weapons system cost). For the purposes of this exhibit, "service craft," "landing craft," etc., are single line items. The exhibit covers ships in the prior, current, and budget years.
P-2	Items Requiring Reprogramming	012	Self explanatory.
P-6	Procurement Program & Financing Summary (Apportionment Submission only)	012	Lists program by budget activity and financing of the program (receipts and reimbursements from federal, trust, and non-federal sources, unobligated balances available, and new obligational authority).
P-35	Procurement Program for Major Ship Components:- 1. Radar 2. Electronics Components over \$500K (unit cost) 3. Sonar 4. Fire Control Systems 5. Ordnance equipment over \$500K (unit cost) 6. Missile Systems Major Components 7. Communications Equipment over \$500K (unit cost)	602 04412 06H3F 602 602 NAVAIR NAVELEX	Lists all equipments having a unit cost of \$500,000 or more; all radar sets; all sonar sets; all fire control systems; all missile systems major components. The exhibit covers all ships in prior, current and budget years. Exhibits shall be submitted to SEA 012, who secure necessary SHAPM review.

Figure 12 (continued)

Exhibit	Title	Prepared by	Description/Remarks
P-8	Analysis of Ship Cost Estimates	012/SHAPMs	SEA 012 will prepare the exhibits for current year and prior; the SHAPMs will prepare the exhibits for the budget year. Prior year exhibit shows original estimates approved by Congress, the last OSD-approved estimate, and the current estimate.
P-8a	Analysis of Ship Cost Estimates/Major Equipments	SHAPMs	Self-explanatory.
P-8b	Analysis of Cost Estimates Basic/Escalation	SHAPMs	Self-explanatory.
P-9	New Construction and Conversion Program Data	SHAPMs/SSPO	Exhibit lists ships by ship type, mission, characteristics (hull, machinery) armament, accommodations, cargo capacity, and procurement history. A separate P-9 is prepared by SHAPMs having cognizance over a type of ship. In filling out the procurement history, the latest SCA estimates should be used. In addition to the P-9, a copy of the approved ship characteristics should be submitted for each ship in the budget year request.
P-9a	Service and Other Small Craft	PMS 300	Exhibit lists type of craft and description, unit cost and quantity, and an asset dynamics table (on hand plus deliveries minus losses versus requirements). The exhibit shall cover all craft in prior, current, and budget years.
P-10	Procurement of Advance Design and Material	SHAPMs/SSPO	Separate exhibits are prepared for each ship requiring advance procurement funds, showing items to be purchased, quantity, type of lead time, date contract

Figure 12 (continued)

Exhibit	Title	Prepared by	Description/Remarks
P-10	(continued)		required, date delivery of first equipment required, number of months between start of construction and required delivery date, and the unit and total costs. All equipment listed on this exhibit should be included on Exhibit P-35.
P-10a	Ship Construction Plan	SHAPMs/SSPO	Exhibit shows unawarded ships/funded prior to budget year and the budget/apportionment request by hull.
P-27	Ship Production Schedule	SEA 075	Self-explanatory.
P-28	Test and Evaluation Schedules	012	Self-explanatory.
P-29	Outfitting Costs	SHAPMs/SSPO	Exhibit lists all ships for which outfitting funds are required in the prior, current, or budget year. Cost shall reflect estimated requirements (gross commitments) for both APA and NSA outfitting material.
P-30	Post Delivery Estimates	SHAPMs/SSPO	Exhibit lists (for each ship and ship type, for the prior, current, and budget years) the construction completion date, the post delivery availability start and completion date, the total estimated cost, the shipyard assigned the work, and the major items of work. Costs shall reflect estimated requirements (obligations).
P-36	Workload Data	012/SHAPMs	Self-explanatory.
P-42	Component Leadtime and Installation Schedule	012/SHAPMs	Self-explanatory.
E-1	Expenditures & Collections by FY Program	012	Self-explanatory.

Figure 12 (continued)

Exhibit	Title	Prepared by	Description/Remarks
E-2	Fiscal Year Programs and Financial Resources	012	Self-explanatory.
	Program & Financing	012	Budget plan amounts, obligations, expenditures and financing.
	Object Classification	012	Program and Obligations by object class.
	Monthly Phasing of Obligations	012	Obligations are furnished by SHAPMs and SSPO (for FY 1963 and prior years) by major cost categories and are then summarized and refined for external use by SEA 012.
DD Form	Apportionment & Reapportionment Schedule (Apportionment submission only)	012	Self-explanatory.
Table 9A	Navy Shipbuilding Program - New Construction & Conversion/Major Alterations (Congressional submission only)	012	This exhibit shows the completion of ships; status of approved ships and the number of ships in the budget year program.
Table 9B	Shipbuilding & Conversion, Navy Budget Plan. Estimates as approved by the President for submission to Congress.	012	This exhibit shows the budget plan for this budget as approved by the President for submission to Congress. It lists the average unit cost of each line item, the number of ships in each line item, the total estimated cost of each line item, the advance procurement authorized for each line item in prior years, and the advance procurement being requested in the budget year.

now includes only specialized instructions such as program basis for estimates, key assumptions to be used, and special supporting material requirements. Likewise, the "call" memorandum issued annually in August or September by the DASD (Comptroller) is limited to specific instructions which amplify guidance included in the Budget Manual.

3. Navy Comptroller

Within the Department of the Navy, NAVCOMPT provides technical guidance and direction for formulation of the budget to responsible offices for the various appropriations and funds. This takes the form of instructions of a general and continuing nature published in the Budget Guidance Manual as well as current budget policies in Volume 7 of the NAVCOMPT Manual. It also includes instructions of a specific nature tailored to considerations of the particular fiscal year being addressed. These instructions may address such topics as budget amendments, method of handling price escalation and special purpose exhibits.

Subsequent to the development of the POM, the Comptroller of the Navy, acting for the Secretary of the Navy, issues a call for budget estimates from the major funds claimants like NAVSEA, and their field offices. Based on the Navy Resource Model (NARM), a "crosswalking" is made from program and mission and support categories, the accounting structure of the POM, to resource categories, the accounting structure of the SCN appropriation. The call for estimates includes planning figures in each resource category

as a guide, based on the NARM, plus the budget schedule to be followed. Certain dates in the schedule are established by law, such as, the beginning and end of a fiscal year and the time for the President's submission of the budget to Congress. The NAVCOMPT call for estimates is promulgated in May. The Naval Sea Systems Command does not wait until the call for estimates is given before preparing its estimates. Time constraints are too tight for this.

The initial guidance for the preparation and submission of the FY 77 budget included requests for an analysis of estimates and a special SCN exhibit to NAVCOMPT [29: p. 7]. The FY 77 estimates were submitted in terms of a "BASIC" and "ADDENDUM" budget. Both budget submissions were required to be complete with all the exhibits and back-up justification required. The BASIC budget reflected the full funding of programs included in the SECNAV approved POM. New programs which were not a part of the approved POM were to be excluded from the BASIC budget [29: p. 4]. The ADDENDUM budget represented only those essential programs which could not be accommodated in the POM, or programs finalized and approved subsequent to POM development and submission.

Figure 13 is a representation of the form used to show the analysis of estimates for the FY 77 BASIC budget. This form was required for the purpose of establishing and maintaining budgetary controls. The exhibit itself was used as justification for increasing fiscal control over each appropriation. The SCN appropriation falls into the Procurement category.

Figure 13

DEPARTMENT OF THE NAVY
NavCompt FY 1977 Budget Review
Analysis of Estimates, FY 1977 (BASIC)
(Dollars in Millions)

Appropriation: _____					
Item/Program	POM-77	Military/Civilian	Military/Civilian	Wage Boards	Total
(1)	(2)	Pay Increase	Per Diem Increase	FY 76 FY 77	Submit
		(3)	(4)	(5)	(8)
				Escalation	Other
				(6)	(7)
					(8)

- Notes: (1) Detail required
- a. Personnel - Budget Activity
 - b. Operations - Claimant and/or element aggregation
 - c. Procurement - P-1 line item
 - d. RDT&EN - Program elements
 - e. Construction - Budget Activity
 - f. Family Housing - Budget Activity
- (2) Total at Budget Activity and at Appropriation level.
- (3) Show detail only where changes occur. Use an "All Other" category for items not changing within each Budget Activity.
- (4) It is essential to display changes from the POM base to the Submit Total in the proper columns. All columns except column (7) may be additive to fiscal controls for the annual operating accounts and RDT&EN. Accordingly, all changes must be annotated and justified in the regular back-up material.
- (5) Escalation reflected in this exhibit will be that which is over and above the POM-77 base. Provide detailed narrative justification with this exhibit to support amounts included, i.e., basis or source (documentation) and/or rationale for computations for each type of increase reflected. RDT&EN will identify the break between actual price increases and projected escalation throughout FY 1977 for non-weapon systems.
- (6) In column (7), Other, include the increases authorized as other program adjustments necessary to stay within the POM fiscal constraints.

A special SCN exhibit was required for the SCN appropriation shown in Figure 14. It was required as back-up material for the budget submission of the SCN appropriation.

It becomes immediately apparent that the types and numbers of required exhibits becomes complicated as each level in the chain of command requires their own exhibits to supplement those prescribed in the Budget Guidance Manual.

4. Naval Sea Systems Command

NAVSEA promulgates the final and most detailed guidance for the SCN budget formulation. The guidance provides general information on the budget and apportionment process including the Congressional review calendar [37: p. 2].

Figure 15 shows the approximate schedule promulgated for all NAVSEA Program Managers to follow in 1976. The schedule includes the Weapons Procurement and Other Procurement appropriations along with the SCN appropriation.

The Naval Sea Systems Command also lists the exhibits required by higher authority in the review of SCN appropriations. Figure 12, shown previously, is a summary listing of exhibits required for the budget and apportionment review of the SCN appropriation. The figure also lists who is responsible for the preparation of the exhibit and a brief description of the exhibit. Copies of the actual exhibits appear in Appendix A.

Figure 14

DEPARTMENT OF THE NAVY
NavCompt FY 1977 Budget Review
Special SCN Exhibit

<u>P-1 Line Item</u> (1)	<u>POM 77</u> <u>Base</u> (2)	<u>Revisions</u> <u>to POM</u> (3)	<u>Fiscal Year</u>	
			<u>Revised</u> <u>Total</u> (4)	

- Notes: (1) Using the estimates provided in the POM 77 SCN Procurement Annex as a base, provide updated estimates for FY 1975, 1976 and 1977 for the SCN appropriation based upon the latest experience with material and manhour requirements.
- (2) Changes to the POM 77 base resulting from note (1) above will be reflected in column (3) above, "Revisions to POM."
- (3) Provide detailed justification to support changes, including rationale and method of computation for each change reflected.

Figure 15 - Typical Tentative Schedule for Budget and Apportionment Reviews

Command Action	For NavCompt Submission	For OSD Submission	For Congressional Submission	For Apportionment Submission
I. Command Action				
a. Call issued by applicable NAVSEA Appropriation Division	1 June	20 Sept.	20 Dec.	15 March
b. Preparer submits to applicable NAVSEA Appropriation Division	1 July	25 Sept.	5 Jan.	15 April
c. Review by SEA 01	15 July	26 Sept.	6 Jan.	5 May
d. Review by Budget Review Board	18 July	N/A	N/A	8 May
e. Review by SEA 00	20 July	N/A	N/A	10 May
II. External Review				
a. NAVMAT	26 July	22 Sept.	8 Jan.	14 May
b. NAVCOMPT/OPNAV	1 Aug.	27-30 Sept.	10 Jan.	26-31 May
c. OMB/OSD	N/A	1 Oct. to 15 Dec.	10 Jan.	1-30 June
d. Congress	N/A	N/A	20 Jan. until passage of the Appropriation Act	N/A

B. SCN BUDGET INITIATION

1. Cost Estimating

Valid estimates for budget submissions are required as much as two years in advance of the program year of a given ship. For the Five-Year Defense Program (FYDP), they are required more than five years in advance. Yet the final acquisition cost is determined only after all contractual releases have been obtained from the shipbuilder, some ten to fifteen years after authorization. This time span is but one of the problems facing the ship cost estimator. Since his work will, to a considerable extent, determine the final dollar amount appropriated, the proper completion of his task is of concern to all involved in the shipbuilding process.

All estimates for ship construction and conversion to be used in budgeting, programming, or planning must be prepared by NAVSEA, and are subject to the concurrence of the Deputy Chief of Naval Operations (Surface). The Director, Ship Characteristics Division, is the OPNAV point of contact with NAVSEA concerning construction and conversion cost estimates and feasibility studies, except for those projects specifically designated by the Chief of Naval Operations where a Program Coordinator has been assigned and the charter defines procedures authorizing a direct relationship with the NAVMAT Project Manager [48: p. 3].

a. Background and Capabilities

Before continuing, it may be helpful to define and contrast the terms "estimate," "price" and "cost" because

they each have a specific meaning in the context used here which is different than the commonly accepted meaning. An estimate is the predicted total end-cost of a ship which the professional ship cost estimators in SEA 01G develop for use as a budgetary planning figure for constructing or converting a Naval ship. The estimate is based on specific information describing the characteristics and configuration of a ship. In addition, these estimates, when made for budget purposes, include projections of anticipated growth through the end of the construction period based on statistical analysis and a forecast of future market factors, including labor and material escalation [26]. The price is the dollar amount which finally emerges from the various levels of budget review during the planning, programming and budgeting cycle or after Congressional authorization. The cost is the total dollar amount expended for the completed ship and is determined only after all contractual releases have been obtained.

Early development of a statement of missions and tasks and the single sheet characteristics is necessary for each ship contained in the SCN portion of the Navy's FYDP, POM, or budget documents in order that meaningful cost estimates can be provided. These documents, for each type or class of ships, provide the key to ultimate ship capabilities, characteristics and cost.

The designated Type Sponsor in OPNAV (see Figure 16) retains cognizance and coordinates studies to develop the single sheet characteristics and obtains the initial cost

Figure 16

Type Sponsors, Coordination Offices, and Program Coordinators

<u>Ship</u>	<u>Type Sponsors</u>	<u>Coordination Offices</u>
Battleships/Cruisers	34	43/094/OP-03G
Command Ships	34	43/91/094/OP-03G
Aircraft Carriers	34	03V/43/51/094/095/OP-03G
Destroyers	34	43/094/095
Ocean Escorts	34	43/094/095
Submarines plus AGSS, AS, ASR and FBM Support Ships	31	43/094/095
Mine Warfare Forces	32	43/094/095
Amphibious Warfare Forces	34	43/094/OP-03G
Underway Replenishment Ships	34	40/43/094/91/OP-03G
Major & Minor Fleet Support Ships	34	43/094
AGOR/T-AGOR, AGS/T-AGS	OCEANAV	03R/32/43
Service Craft	43	36
Combatant Small Craft	34	43/094
AGMR, AGTR	34	03R/43/092/094
MSTS	MSTS	34/40
BMS/SABMIS SLMS	097	34/094
AVM, ADGE/AGEH	07	(As indicated by mission)
NR, certain AGSS	03U	31

Program Coordinators

CVAN (New Const.)	03V	34/36/51/75/094
Destroyers (New Const.)	03D	03G/32/34/35/36/75/094
FDL (New Const.)	36K	36/40/094
LFS (New Const.)	36K	34/36/094
LHA (New Const.)	36K	34/36/094
SSN (New Const.)	03N	31/32/36/75/094
ULMS	315	31/36/094

estimates until such time as it has been firmly established that a ship being developed merits a place in the Navy's program. When the requirements for the ship are well enough established to justify formal issuance of a mission and tasks statement and single sheet characteristics, then its characteristics become a responsibility of the Ship Acquisition and Improvement Council (SAIC) [48: p. 5].

The Council is responsible for recommending the characteristics for ships to the Chief of Naval Operations. Such characteristics are developed from the criteria of military worth, technical feasibility and financial acceptability. The Council is directed to carefully consider cost factors in their deliberations and not to lose sight of the vital importance of economy in money, manpower and time [49: p. 2]. The single sheet characteristics that are developed are composed of fifteen categories: 1) Mission and tasks, 2) Hull size, 3) Speed, 4) Endurance, 5) Machinery type and arrangement, 6) Armament, 7) Ammunition, 8) Fire control, 9) Electronics, 10) Accommodations, 11) Stores period, 12) Aviation features, 13) Protection, 14) Miscellaneous and remarks, 15) Mark-up/Model requirements [48: p. 6].

In the detailed development of characteristics, inputs are required from the Fleet, various OPNAV offices, the Naval Material Command, the Bureau of Naval Personnel, the Bureau of Medicine and Surgery, and from Industry. Insofar as possible, ship characteristics must be supported by analyses of alternative configurations and costs, and the

influence of such alternative configurations on system/subsystem effectiveness.

In June 1969 an "SCN Pricing and Cost Control Study" was conducted to determine NAVSHIPS, now NAVSEAS, cost estimating capability [26]. In attempting to evaluate estimating performance in determining dollar requirements for budget purposes, data available from budget documents were examined and compared with current costs as aggregated and projected in the August 1968 Ship Cost Adjustment Report. The Ship Cost Adjustment (SCA) Reports are discussed later in this thesis. In making this comparison, the ship programs for Fiscal Year 1964 through Fiscal Year 1968 were chosen. A comparison of Congressional estimates with current estimates for the prescribed years proved to be inconclusive [26: p. IV. E-8b]. Many instances were found where design and other changes occurred after the initial estimates were submitted and which were of such significance as to render initial estimates invalid and therefore an improper basis for comparison. It became readily apparent that a simple comparison of estimates included in Congressional budgets with current estimates could lead to no supportable conclusion as to the adequacy of the ship cost estimating technique in predicting future ship costs.

In view of the inability to adjust estimates for compability purposes to reflect changes which occurred subsequent to but outside the scope of initial budget estimates, it was considered that the best measurement of estimating

performance could be made by comparing NAVSHIPS pre-bid estimates with industry bids for the same bid package. In such cases, both NAVSHIPS and industry were considered to have the same degree of information available to them, such as a design which is definitized by contract plans and specifications.

The available data in NAVSHIPS were collected, assembled and analyzed to determine how well the estimators performed when developing an estimate for purposes of bid evaluation. The established goal for NAVSHIPS was to produce an estimate of the average bid which was expected to be received from all participating bidders. For new construction, the average NAVSHIPS estimate of the "average bid" for the available ship contract data during the Fiscal Year 1964 to Fiscal Year 1968 period was 3% less than the industry average bid [26: p. IV. E-16].

An examination of the bids received for conversions and the estimates prepared by NAVSHIPS indicated that the average forecast by NAVSHIPS of the average industry was 3.6% above that bid. By ship type, deviations ranged from an underestimate of almost 20% to an overestimate of almost 31%. It was concluded that estimating for conversions was much more difficult than estimating for new construction. The bids from industry averaged a 40% deviation from low to high bids received, providing further evidence that conversions were extremely difficult to estimate for private shipbuilders as well as NAVSHIPS. The study concluded that

NAVSHIPS' estimating capability, on a program basis, proved satisfactory as compared with industry performance. This conclusion was further supported by formal statistical techniques. Since the techniques used in arriving at pre-bid cost projections by the NAVSHIPS cost estimators were considered to be the same as those used in developing budget estimates, the study concluded that the capability for developing such estimates was satisfactory when adequate definition of budgeted ships was available.

The study could find no basis for suspecting that the basic ship construction estimating technique was a primary causative factor of program overruns. The accuracy of the estimates, or at least the ability of these estimates to forecast the ultimate end-cost of the ship under usual economic conditions, was judged to be dependent to a large extent on how well the ship was defined before the estimate was made. Accordingly, the most important factor in program control, for a period prior to and including budget submissions, was considered to be a detailed and lasting definition of the ship.

NAVSHIPS' cost estimating capability was subsequently reevaluated again, with similar conclusions, and is briefly discussed in the July 1972 "Shipbuilding and Conversion Improvement Program Report on Evaluation Study."

b. Problems Encountered in Ship Cost Estimates

The problems encountered in ship cost estimates can be grouped into three general categories - inherent

problems, controllable problems, and non-controllable problems [20: p. 442].

The inherent problems include - complex projects, high technical risk, and long project duration.

Naval ships characteristically are complex. A nuclear powered aircraft carrier, for example, has many systems required to be priced. Figure 17 is an example of the systems required to be estimated. A review of any single unit procured by the defense or commercial industry for land or air use will indicate few if any can rival this combination of total cost, number and scope of complex systems required to be estimated.

The NAVSEA SCN projects contain both technical uncertainty and technological risk. As the level of technology increases, risk and total estimating error increase. Systems that appear to be within the state of the art and involve only a moderate degree of technical uncertainty, such as a newness factor, may actually involve an element of technological risk and as a consequence be significantly underestimated.

The projects in the SCN appropriation are "end costed." This full funding concept requires budget estimates to include all funds to pursue projects to completion. Initial cost estimates must include basic contract price, estimates for developmental and contract change orders, escalation of labor and material through contract completion and other expected cost growths. In view of the fact that

Figure 17

Estimated Initial Acquisition Price in FY 72 -
\$640 Million Per Unit
(Excluding Aircraft Cost)

Description of Systems Required to be Estimated:

- Structure - An envelope in excess of 1,000 feet long, weighing over 70,000 tons. Constructed of a variety of materials and custom designed for long life.
- Personnel - Accommodations for in excess of 5,000 work spaces are needed to support the personnel and the primary mission requirements.
- Electronics - In excess of 13 major electronic systems for navigation, communication and weapons.
- Armament - Both offensive and defensive suits.
- Aircraft - Requirements for launch, retrieval and full support activities.
- Power - Several hundred thousand shaft horsepower required for movement at high speeds. Auxiliary power needed for independent support of all other systems.
- Environment - Support needed for operation over wide extremes of water and air conditions.

it may take ten to fifteen years from initial estimate for a carrier to completed construction, it becomes apparent that the cost estimating problem is enormous.

Controllable problems are those which can be reduced or eliminated by the application of resources, be it improved management, time, money or manpower. These problems include - insufficient input definition, lack of adequate bid data, insufficient time to develop estimates, shortage of trained personnel and programming problems.

Insufficient input definition directly affects the cost estimate of a ship. If the ship characteristics are not adequately defined, the resulting cost estimate will be inaccurate. A cost classification system was developed to strengthen the requirement for better input or definition of a ship prior to estimating. This system will be discussed later in more detail.

NAVSEA maintains a data bank of bid data received from shipbuilders to aid cost estimators in their efforts. The data itself cannot be easily handled since practically every shipbuilder uses a different accounting system. Major differences result from the fact that one yard calls the first level of supervision "direct labor" whereas other yards may call it overhead. In a procurement of a non-selfpropelled barge, the total price, manhours and material varied by several hundred percent among the yards [20: p. 450].

Insufficient time to develop estimates results when it can be seen that there is usually less than one year

available from the issuance of the initial requirements in November to the submittal of firm budget estimates in the following September. For the FY 71 program, 117 ships at over \$6 billion were estimated initially. This was a large undertaking by anyone's standards. Changes in program size and requirements further compound the problem during the year.

A shortage of trained personnel is a continuing problem. When compared to commercial shipbuilders, NAVSEA uses fewer personnel, resulting in a smaller man-hour effort to make larger and more complicated estimates. In 1970 the typical large commercial shipbuilder had a \$100 million volume of business annually. The Government's estimating staff of smaller size would, however, annually prepare budget estimates for a five-year program which may have a valuation in excess of \$25 billion and bid estimates for a \$2 billion program. Until 1966 the ship cost estimating staff for the SCN program consisted of four cost estimators. It was later increased to 15 ship cost estimators with an additional cost analysis group of eight to provide support to the cost estimating functions [20: p. 452].

Programming problems arise when SCN budget estimates must be submitted prior to the completion of the RDT&E phase of those ships undergoing concept formulation and contract definition. In this instance, arbitrary requirements are used as the basis of the estimate. Any subsequent changes in requirements will produce changes in the cost estimate,

but these changes are not considered to be due to estimating errors.

Non-controllable problems are those problems that strongly affect cost estimates, but which cannot by their nature be regulated or readily forecasted. These problems consist of general economic conditions and specific shipbuilding market conditions that are out of the control of the cost estimator, such as strikes or weather conditions.

The present general economic scene is characteristic of the problem to accurately estimate future procurement costs. The economic uncertainty is such that two economists can agree on the direction of a business indicator like the general price level, but not on the magnitude of change. Theories of measurement are disputed and a single indicator, such as the prime interest rate, cannot be accurately forecasted for a six-month period. Yet, accurate cost estimates are required for procurements with construction times in excess of five years and contractual obligations in excess of ten years.

Past historical trends on a substantial number of general economic and price indicators available are not directly reflective of the shipbuilding industry. Imperfections exist, and the best available index on increasing costs, developed primarily on BLS data, fail to directly reflect either the various types of ships or the cost of marine components that go into a ship.

A study by the Center for Naval Analysis which examined the price prediction problem in detail concluded there is little reason to expect significant improvements in the quality of forecasts [17]. Suggestions were made, nevertheless, that a staff group should be available full time to deal with general price forecasting and prediction of specific shipbuilding market conditions in the cost estimating division.

Market conditions affect cost estimates also. By definition, they are those factors which cumulatively affect ship prices over a relatively short period of time. Some of these factors are:

- (1) Extent of need for immediate additional contracts; desired level of employment and financial status of the bidder or parent organization.
- (2) Outlook for future contracts, commercial or military, in the near future and long range time frame.
- (3) Expected competition from other bidders.
- (4) Shipyard labor costs, including the remaining period of firm wage agreements and the expected rise of future wage contracts.
- (5) Material cost level, which includes all outside purchases and subcontracts.
- (6) Desirability of type of construction.

During the period of 1957 to 1962, the selling prices of ships decreased considerably. The sharp decrease was attributed to several market factors, such as a decrease in the shipbuilders' profit margins and a substantial reduction in vendor prices for major marine components [20: p. 457]. During this period of tight competition, for shipbuilders as

well as vendors, profit levels were thought to be low or nonexistent. Several shipyards closed. After 1962, selling prices began to steadily rise. The gradual rise from 1962 to 1965 was considered to be primarily the result of increases in shipyard labor costs. Material costs remained relatively low and profits continued to be depressed. After 1965, sharp price increases were experienced. Products containing copper, as well as certain marine components, increased in price by 100% in a few years. The "low price" shipyards were filled to capacity because of an increase in the construction of naval surface ships, and the number of bidders for shipbuilding contracts decreased as a result. Competition went from as many as ten bidders down to, in some instances, a single bidder. Other factors that added to the rising costs included the rapid influx of inexperienced manpower which temporarily decreased the over-all level of shipyard efficiency and the fact that shipyard facility improvements had to be paid for by a higher level of profit than that experienced in preceding years.

In summary, the price of ships is not only affected by conditions in the shipbuilding industry but also by the uncertainty inherent in the general economy.

c. Estimates for the Budget

Actual acquisition costs are determined only after a contract is awarded and performed. For budget submissions and appropriation requests, however, estimates are required as much as two years prior to contract award.

Misunderstanding and misinterpretation have been experienced with respect to estimates submitted for the cost of new ships and conversions in the past. Estimates prepared at significantly different time intervals for what appears to be the same ship have been compared without appreciation of the substantive underlying reasons for their differences. Assumptions that major differences in estimated costs are solely the result of refinements of the estimating process have been made in the absence of adequate information to explain the differences.

The degree of design and cost information available for the development of end-cost estimates of ship construction and conversion varies considerably in the planning phase at the time a ship system is initially identified for improved fleet capabilities. Some ships in the planned program are an increase in the quantity of a type already in the fleet or under construction or conversion. For these types, the degree and quality of design and cost information available, excluding escalation, is generally of high caliber. However, many ship types planned are: 1) prototype in nature, 2) developmental in certain areas and may vary from an existing design, 3) or under design development by feasibility studies or computerized model ship concept investigations.

In an effort to improve the level of communication and to promote a better understanding of cost estimates for the SCN program, the Chief of Naval Operations established seven SCN cost estimate classifications [53: p. 1].

The classifications are labeled A, B, C, D, E, F and X. Classifications A to F are indicators of the availability of design and cost information, and classification X is a descriptor of policy actions taken either prior to or subsequent to the development of an estimate identified as one of class A through F. The intended use and a brief description for each classification of a cost estimate are as follows:

(1) Class A is a detailed cost estimate. It is an extensive cost estimate prepared to validate an end-cost estimate for determination of a fair and reasonable price for comparison to contractors' prices and for contract negotiation purposes. It is always prepared in the post-budget process and generally prior to a bid opening or scheduled negotiation of fixed-price incentive or cost-plus type contracts. This level of cost estimate requires contract plans and specifications and a detailed contract-design weight estimate as inputs from the design process. The cost and economic inputs are primarily unit material and man-hour cost estimating relationships developed to the NAVSEA Consolidated Index of Materials breakdown of costs, vendor quotations for all major material items and a thorough analysis of the competitiveness of the market, expected labor and profit rates, escalation and other pertinent factors. Due to the extensiveness of the estimate, requiring in excess of five weeks of development and calculation of data, this type of estimate is only prepared when conditions so warrant such a level of detail.

(2) Class B is a bid evaluation estimate. It is prepared to validate the reasonableness of cost estimates received from contractors or government shipyards and is thus prepared immediately prior to a bid opening or upon receipt of an initial cost estimate from a naval shipyard. The scope is similar to a Class A cost estimate except that the estimate is not as detailed. Unlike the Class A detailed cost estimate, material quotations are not necessarily obtained from industry, and the cost estimating relationships used reflect a higher degree of aggregation.

(3) Class C is called a budget quality estimate. These estimates are considered to be the highest level of cost estimates attainable in the planning, programming and budgeting process since the more extensive Class A and Class B estimates are considered post-budget estimates. A Class C estimate is the recommended level for estimates of cost to be used in the budget submission, especially at the Congressional level, preferably for the NAVCOMPT and OSD submissions and whenever feasible for the Program Objective Memorandum estimates for the current budget year. Necessary to this estimate are Ship Acquisition and Improvement Council (SAIC) approved characteristics with appended electronic requirement and weapons installation plans. In addition, special items not necessarily included in the SAIC approved characteristics, such as extent of automation, hull materials, shock level, silencing requirements, selected system engineering requirements and other unique or special items, should be known.

For conversion estimates to conform to this classification, the detailed scope of the complete ship rearrangements and relocations, as well as a survey of the repair status, time since previous overhaul, outstanding ship alterations and history of previous rehabilitation costs on similar ship type conversions must be available. The electronics, ordnance, propulsion, etc., should be sufficiently defined and developed technologically to eliminate any inordinately high developmental costs. If items of uncertainty do exist, appropriate growth factors must be included and the cost estimate classification additionally noted. The cost estimating relationships (CER) used in the estimate should be based on reliable design and cost data, such as accepted weight estimates and contract bid information or naval shipyard return cost data should be available. If a lower category estimate is used for budget submission, the design and estimating process must continue on a priority basis until a minimum of a Class C estimate is reached [53].

(4) Class D is a feasibility estimate. It is of a lower quality than a Class C estimate due to an insufficiency in the design, procurement, or cost information. It is developed primarily due to the result of a need for an estimate before such information can be further developed to justify a Class C estimate. Such early estimates are usually exploratory in nature and are prepared to perform trade-offs and cost effective analysis, to establish notional ship characteristics and for costing the Program Objectives in the

out-years where there is an absence of sufficient design development. Generally, the primary design input for a Class D estimate will be Feasibility and Cost Study Characteristics (single sheet) as opposed to SAIC-approved characteristics included in Class C estimates.

(5) Class E is a computer estimate. It is an estimating process used when cost and design information are developed by use of a computer model which grossly determines ship specifications from a given set of input characteristics. In general, the output cost and design information is calculated from estimating relationships through a series of equations while payload type items, such as electronics and ordnance, are costed by a shopping list technique within the model. Present applications of this type of cost estimate are for parametric cost studies, where relative costs and not absolute costs are primarily considered, and for estimates of ships which are in the conceptual design stage.

(6) Class F is a "ball park" estimate. Quick cost estimates are those prepared in the absence of the minimum design and cost information package and are based on gross approximate parameters. Typically, estimates are generally calculated by merely escalating to current dollars an empirical cost for a similar ship and adding factors for expected changes in design, accounting procedures or other economic considerations.

(7) Class X is a directed or modified estimate. This estimate is generally a total cost derived without a

developed design or a detailed cost estimate. It can also be a modification of any previous cost estimate, Classes A through F, to conform to budget cuts or restrictions on the total cost, which is not based on scope decisions. Adjustments may be reductions to cost elements such as change orders, post delivery, escalation and outfitting allowances, or by limiting the scope of the design or rehabilitation of the ship.

Except when modified by higher authority, NAVSEA attempts to achieve a Class C "budget quality estimate" for every SCN budget submission. The following specific actions are considered an aid to increasing the ability of NAVSEA to produce Class C estimates and to improve the accuracy and credibility of budget submissions. First, SAIC-approved characteristics must be provided at least 15 months prior to the programmed year of construction. In the case of conversions, approved characteristics and the associated rehabilitation package must be provided no later than 18 months in advance of the programmed year of construction [48: p. 3].

Second, submission of future budget estimates should be based on the average costs of prime shipbuilding contracts only, recognizing that total end costs will vary due to escalation and other factors. In the past there have been misconceptions of the nature of estimates of multi-ship programs. For example, cuts have been made in programs on the basis of dividing the number of ships into the total cost of the program, resulting in a lower unit cost than would be

possible to attain in a smaller program. This action will preclude such misconceptions.

Third, the SAIC, coordinating with OP-03, should thoroughly evaluate the long-range effect of deleting desirable characteristics from a ship before they are deleted in order to obtain an end-cost estimate that is within an arbitrary price ceiling. There should be reasonable assurance that they will not be re-introduced as a change to the characteristics during the construction period [28: p. 01-10].

d. SCN Cost Estimate Categories

Estimates for budget back-up purposes are prepared on budget exhibit P-8 (see Appendix A) [42: p. 3]. The breakdown is made consistent with NAVSEA SCN cost categories. Both the so-called hard-core and the end-cost estimates are prepared. Hard-core estimates are based on "single sheet" characteristics approved by the Ship Acquisition and Improvement Council (SAIC) and currently specified equipment models, using the equipment prices and labor and material rates expected to exist at the time of the contract award. When single page characteristics are not used, estimates are based on notional characteristics developed jointly by the SHAPM and the OPNAV sponsor.

The SCN cost categories are used to identify costs in all funding documents. These cost categories apply to all costs under NAVSEA administered subheads of the SCN appropriation. The basic categories are shown below: [43: p. 2]

100 Series	Construction Plans (Drawings).
200 Series	Basic Construction/Conversion Costs under Major Contracts or Project Orders at Private or Naval Shipyards.
300 Series	Change Orders.
400 Series	Electronics GFM.
500 Series	Other GFM Areas.
600 Series	MAP Ordnance Funded by NAVSEA SCN.
700 Series	Post Delivery.
800 Series	Miscellaneous Costs.
900 Series	NAVORD/NAVAIR SCN Costs.

Appendix B shows a further breakdown of all current SCN cost categories and Appendix C provides definitions of the cost categories.

e. Preparation of Estimates

To satisfy the requirements for the various estimates, a centralized cost estimating capability is maintained in NAVSEA (SEA 01G). A variety of sources are solicited for cost and requirements information which, when combined with cost and bid data maintained in SEA 01G files, forms a base from which estimates are derived.

The primary purposes of cost estimating as performed in SEA 01G are:

(1) To permit cost effectiveness comparisons of ship design and other features during the characteristics development process.

(2) To develop estimated costs for budget submissions.

(3) To evaluate the reasonableness of contract prices offered by industry.

Cost estimates for ships are prepared by NAVSEA, with input from other Systems Commands and Project Managers, in response to requests from the Ship Characteristics Board (SCB). The applicable cost categories appear in Appendix B.

The cost estimates for an average navy ship without GFM can be reduced to the following cost groups and respective approximate ratios:

Group 1 -	Hull Structure (Steel)	10%
Group 2 -	Propulsion Plant (Machinery)	21%
Group 3 -	Electric Power Generation (w/o cable)	10%
Group 3&4 -	Cable	3%
Group 4 -	Command and Surveillance (w/o cable)	3%
Group 5 -	Auxiliary Systems	38%
Group 6 -	Outfit and Furnishings -	15%
		100%

From available, data appropriate man-hour/ton and material dollar/ton are determined, to which are applied any adjustments that may be required because of any unique features applicable to the particular ship being considered. Bid data files are researched to determine the most recent man-hour and overhead rates for the shipyards that can physically build the ship, adjusted as necessary by a factor to reflect current conditions. This factor is determined from a review of Bureau of Labor Statistics Indices maintained by

SEA 01G. Figure 18 depicts the BLS Labor Index Trends for selected shipyards up to 1975. A factor is derived from the same source for use in projecting the rates to levels anticipated at the time the ship construction contract is scheduled for award. The same general process is followed in projecting material costs, by applying the Bureau of Labor Statistics Material Index. Figure 19 depicts the BLS Material Index trends for steel vessel contracts.

It should be emphasized at this point that NAVSEA does not use the straight BLS index when determining estimates. Certain factors are generated within NAVSEA that adjust the BLS index to a closer approximation of the shipbuilding industry. For example, the labor index may be further adjusted by using only those shipyards which are the most probable bidders for the contract rather than using all shipyards capable of bidding for the contract. This will provide them with a more accurate labor figure. NAVSEA will also adjust the BLS index to a closer approximation to what is actually used to build a ship. The BLS index for material includes all materials. The adjusted index used for estimates will include only those materials used to build a ship. The basic cost groups previously mentioned reflect these material differences. Figures 20 and 21 reflect the factors developed by NAVSEA in the form of a percent change for material that are used for cost estimating guidance. To the costs thus derived are added estimates for Engineering Services and Construction Services, the latter being developed by a review of bids for

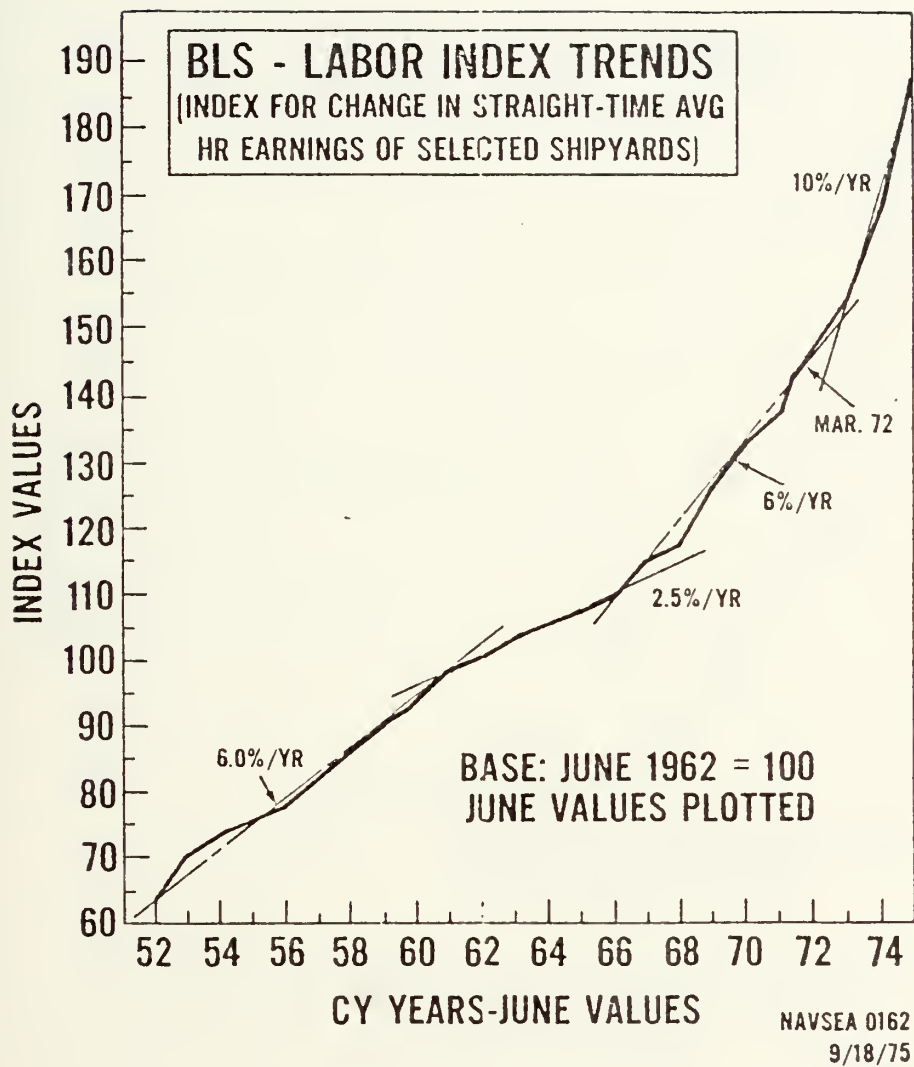


Figure 18

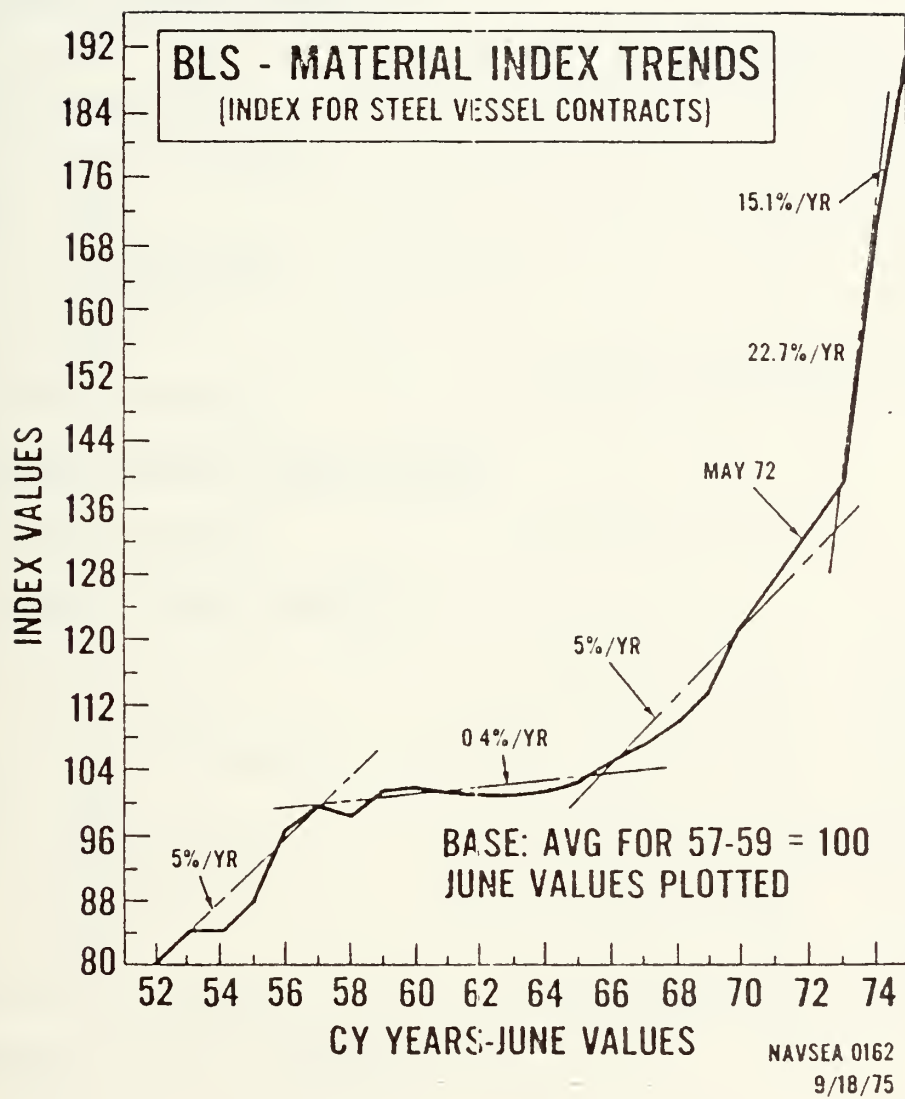


Figure 19

Figure 20

COMPARISON OF NAVSEA PROGRAM PRICE-OUT FACTORS FOR MATERIAL
(% Change)

	FY	'73	'74	'75	'76	7T	'77	'78
<u>FY'76 PROGRAM PRICE-OUT (NOV'73)</u>								
Group 1 Hull		8.4	8.4	8.4	8.4	--	---	---
Group 2 Propulsion		7.	7.	7.	7.	--	---	---
Group 3 Elect (w/o cable)		7.	7.	7.	7.	--	---	---
Group 3&4 Cable		6.	6.	6.	6.	--	---	---
Group 4 Command/Control		7.	7.	7.	7.	--	---	---
Group 5 Auxiliary		7.	7.	7.	7.	--	---	---
Group 6 Outfit		7.	7.	7.	7.	--	---	---
TOTAL (Weighted Average)		7.2	7.2	7.2	7.2	--	---	---
<u>FY'76 PROGRAM PRICE-OUT (REV. JUL-74)</u>								
TOTAL (Weighted Average)		7.2	14.5	16.4	15.2	--	---	---
<u>FY'77 PROGRAM PRICE-OUT (JAN'75)</u>								
Group 1 Hull		4.4	51	19	17	4.0	15.9	---
Group 2 Propulsion		9	15	17	15	3.5	14.9	---
Group 3 Elect (w/o cable)		7	14	16	15	3.4	14.9	---
Group 3&4 Cable		13	23	25	15	3.4	14.9	---
Group 4 Command/Control		6	14	17	15	3.5	14.9	---
Group 5 Auxiliary		8	23	26	16	3.5	14.9	---
Group 6 Outfit		8	15	17	15	3.5	14.9	---
TOTAL (Weighted Average)		7.8	21.8	20.8	15.6	3.5	15.0	---
<u>FY'78 PROGRAM PRICE-OUT (MAR'76)</u>								
Group 1 Hull		4.3	51	14.9	10.0	2.3	10.0	10.0
Group 2 Propulsion		8.6	15.2	17.2	13.4	2.8	12.0	11.9
Group 3 Elect (w/o cable)		7.3	13.8	17.2	13.3	2.8	11.9	12.0
Group 3&4 Cable		13.3	22.5	18.8	4.9	1.8	13.1	8.0
Group 4 Command/Control		5.9	13.8	14.5	9.1	1.8	5.9	10.0
Group 5 Auxiliary		7.6	22.5	21.7	12.0	2.8	11.9	12.0
Group 6 Outfit		7.6	14.7	15.6	12.0	2.8	11.6	12.0
TOTAL (Weighted Average)		7.6	21.5	18.4	11.9	2.7	11.5	11.6

Figure 21

COMPOSITE WEIGHTED AVERAGE MATERIAL COST ESTIMATING
GUIDANCE COMPARISONS

PERCENT OF CHANGE BY FISCAL YEARS

	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>	<u>7T</u>	<u>FY 77</u>	<u>FY 78</u>
November 1973 Guidance	7.2	7.2	7.2	7.2	--	---	---
July 1974 Guidance	7.2	14.5	16.5	15.2	--	---	---
January 1975 Guidance	7.8	21.8	20.8	15.6	3.5	15.0	---
March 1976 Guidance	7.6	21.5	18.4	11.9	2.7	11.5	11.6

ships of similar type. A profit factor is derived through a study of past bid trends and applied to the total of the seven cost groups to obtain the total estimated basic construction estimate. The basic construction costs of follow-on ships are calculated through application of appropriate learning curves to labor man-hours and to projected material cost.

Lists of Government Furnished Equipment and related costs are obtained from the various equipment managers and are reviewed to ensure there are no omissions or duplications before their inclusion in the estimate.

Allowances or reserves are included in the total estimate for the following: escalation, future characteristics changes, change orders and growth factors.

f. Inflation

Inflation is a problem that continually plagues the shipbuilding program. The cost estimators try to decrease its effects through more precise estimates, but the job of predicting inflation is not an exact science. Over two billion dollars of the proposed FY 76 budget was identified as a shortfall due to underestimating inflation in prior years [2: p. 1].

DOD budget policy requires that estimates for anticipated inflation can only be included in the procurement accounts, of which SCN is a part.

The inflation factors developed by NAVSEA are based on historical costs of the major cost groups, previously discussed, for material, specific shipyard labor, overhead

rates, profits, etc. These historical shipbuilder costs are inflated up to the time of contract award. The inflation factors are never officially published by NAVSEA, but are directly incorporated into the estimates that appear on the budget exhibits. The table below represents typical figures that may be used in making budget estimates after developing inflation factors from historical costs [22: p. 2].

	<u>Example - Material Cost Group 2 Prop.</u>	<u>Typical Ship Total Material</u>	<u>Typical Ship Labor Costs</u>
FY 74	15.0%	21.8%	8.8%
FY 75	17.0%	20.8%	11.7%
FY 76	15.0%	15.6%	12.9%
FY 7T	3.8%	3.8%	1.9%
FY 77	15.0%	15.1%	8.4%

Although this table only reflects the percent change in inflation for cost group 2, propulsion, NAVSEA has comparable figures for all of the cost groups which are used to develop their final end-cost estimates.

g. Escalation

Contract escalation is defined as contract costs, paid under a shipbuilding contract with economic price adjustment provisions, as the result of changing labor and material costs in the shipbuilding industry during construction, over which the individual shipbuilder has little or no control.

[25: p. 1].

The basic continuing guidance for price escalation in the programming and budgeting systems is contained in the Department of the Navy Programming Manual, Appendix K, and the DOD Budget Guidance Manual, paragraph 212. It is DOD policy to reflect the best estimate of full costs for the current year and budget year estimates, specifically including inflation or cost escalation for major programs [8: p. 212-3]. In guidance received 18 February 1975, ASD(C) directed that, due to the difficulties inherent in predicting inflation trends for many years into the future, standard appropriation indices published by his office would be used for FY 1978 and all subsequent years [2: p. 2]. This policy was later extended to include the POM. Concern was expressed over the trend and inconsistency of escalation predictions reflected in cost estimates for future out-years of the programs.

The DOD Budget Guidance Manual provided further guidance stating as follows: "Budget year estimates for weapons systems and construction items will reflect anticipated changes in future prices based on specific data, where available. Where specific data are not available, these estimates will reflect increases in prices due to escalation as determined on the basis of price level indices. It is stressed that price level indices may be used to determine the amount of price escalation for a weapon system or construction item over a given time period only in those cases where specific data are not used. The choice of technique is limited, either to specific data or to price level indices, to avoid any overstatement due to double counting."

(1) Specific Data. These anticipated changes in future prices will be determined on the basis of specific data applicable to a given system, considering such factors as contract provisions, labor agreements, productivity and quantity changes, and the extent to which material is on hand or under fixed price contract. The inclusion of specific data in accordance with this technique is not intended as a change from the technique used in previous years for developing estimates for the President's budget and is consistent with the intent of OMB Circular A-11.

(2) Price Level Indices. In those cases where it is not possible to base estimates on specific data, anticipated changes in future prices are based on price level indices. The specific indices to be used for this purpose are published by separate memorandum and no other indices are authorized except for Navy Shipbuilding. These indices are applied to the year in which the expenditure occurs for the budget year program and against the expenditure amount for each year.

The shipbuilders' contract escalation indices, although published by OSD, are submitted to OSD by NAVSEA for review and approval. The NAVSEA forecast of the BLS indices, as approved by OSD PBD 271 dated December 1975, used in calculating "Contract Escalation" is shown in the table on the following page [23: p. 1]. The FY 76 BLS material forecast of 7.0% was based on 10 months of actuals and the FY 76 labor forecast was based on 9 months of actuals.

NAVSEA FORECAST

	<u>MATERIAL</u>		<u>MATERIAL</u>	
	<u>NAVSEA Forecast</u>	<u>BLS Actuals</u>	<u>NAVSEA Forecast</u>	<u>BLS Actuals</u>
FY 75	16.4%	15.1%	11.7%	12.6%
FY 76	10.1%	7.0%	12.9%	6.7%
FY 7T	3.7%		1.9%	
FY 77	12.0%		8.4%	
FY 78	7.6%		9.2%	
FY 79	7.0%		6.2%	
and beyond	6.6%		6.2%	

The BLS Material Index for steel vessel contracts is made up of three commodity subgroups of the Wholesale Price Index. The subgroups and their relative weighting are: group 10-1 (iron and steel), 45%; group 11-4 (general purpose machinery and equipment), 40%; and group 11-7 (electrical machinery and equipment), 15% [23: p. 10].

A breakdown of the subgroup 10-1 and the weighting of its subgroups is as follows:

1011	Iron Ore	.792%
1012	Iron and Steel Scrap	5.587%
1013	Steel Mill Products	72.358%
1015	Foundry & Forge Ship Products	18.261%
1016	Pig Iron & Ferroalloys	3.002%

As can be seen, the Steel Mill Products which consist of plates, sheets and bars, make up 72.4% of group 10-1

and are approximately 33% of the BLS Material Index. From analyses, it has been determined that there is a direct correlation between the behavior of this material index and the Iron Age Steel Composite Index. Accordingly, the Iron Age Steel Composite Prices are used for projecting the BLS Material Index. Further, the steel forecast prepared by the Naval Sea Systems Command is discussed with the economic analysts who work for the steel companies in order to ensure that the forecast is reasonably in line with industry forecasts. Figure 22 shows a graphic display of the relationship between the Iron Age Steel Composite Index and the BLS Material Index from 1967 to December 1975. The indices were revised to a common base of 1967 = 100, and only the December values were plotted.

The relationship shown in Figure 22 was further supported by a Regression Analysis technique using a computer program, "Least Squares Curves Fit" [23: p. 13-16]. As a result, the NAVSEA projected rates for the BLS Material Index for steel constructed ships were as follows:

FY 7T -	3.7%
FY 77 -	12.0%
FY 78 -	7.6%
FY 79 -	7.0%
and beyond -	6.6%

The BLS Labor Index for steel vessel contracts consists of inputs from selected private shipyards in the country. The index is based on the straight-time average hourly earnings as reported by the yards. The selected yards

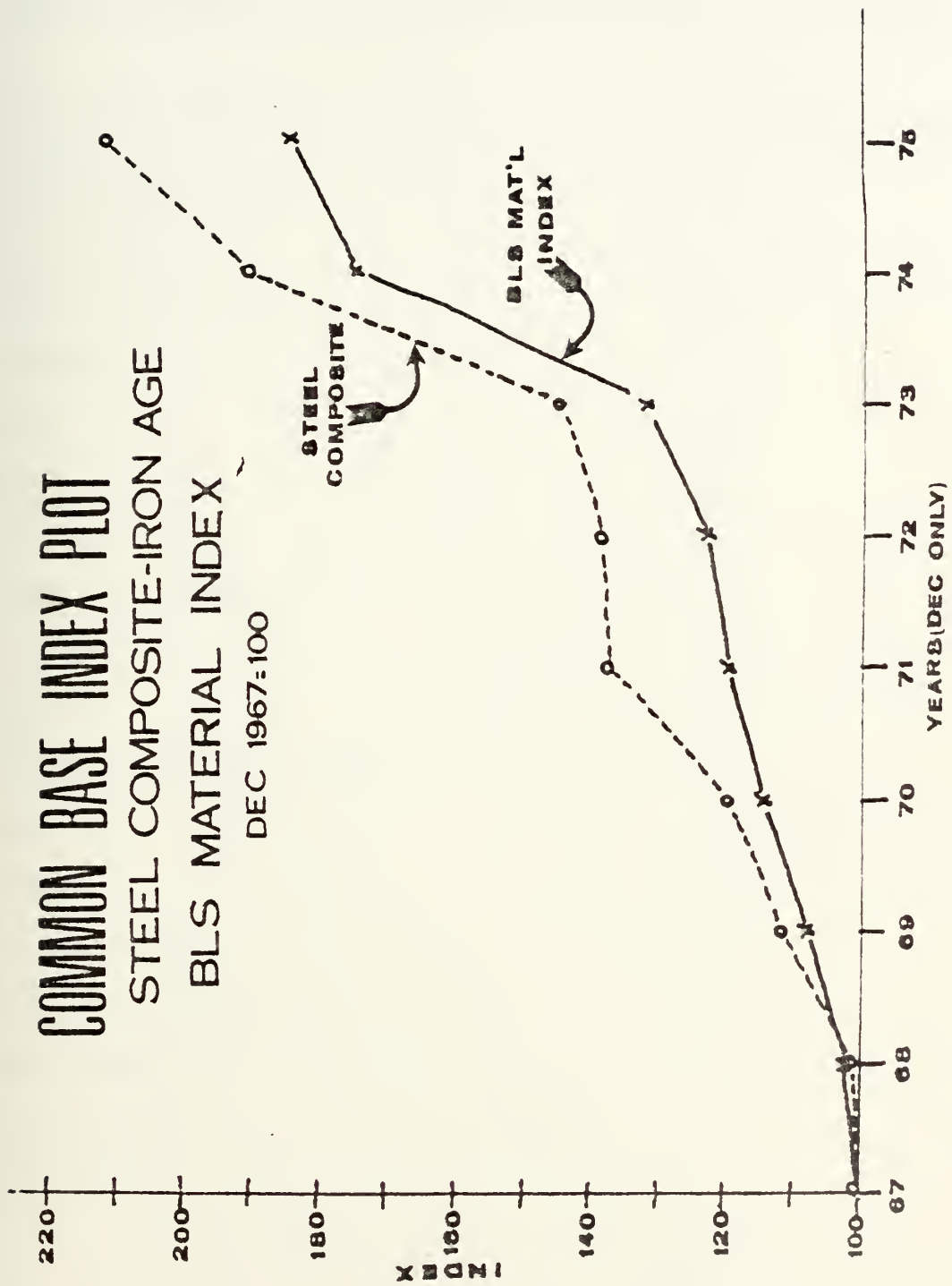


Figure 22

Figure 23

Selected Shipyards and Current Percentage of Work Force

Yard Name	% of Total Reported Employees
Bath Shipbuilding -	3.4
G. D. Groton -	16.4
Newport News -	23.4
American -	1.0
Defoe -	0.3
Dravo -	2.0
Avondale -	7.6
Bethlehem (Texas) -	2.1
Levingston -	2.0
Litton -	27.0
Bethlehem (San Francisco) -	1.1
Gunderson -	0.9
Lockheed -	2.2
National Steel -	5.9
Todd (San Pedro) -	2.9
Todd (Seattle) -	1.6
Williamette -	0.2

and their current percentage of the work force are shown in Figure 23.

The NAVSEA Cost Estimating and Analysis Division (SEA 01G) monitors union wage agreements for most private shipyards. They maintain files on cost of living adjustments and wage increases. Accordingly, the forecast prepared is based on the current and future workload of the shipyards listed in Figure 23. The projected rates for the BLS Labor Index were:

FY 7T -	1.9%
FY 77 -	8.4%
FY 78 -	9.9%
and beyond -	6.2%

The resultant figure used to compute escalation is called the BLS Composite Index of Material and Labor. The associated ratio is 60% material and 40% labor.

Out-year pricing includes those program years beyond the current fiscal year, escalated with a BLS projection, using a 50/50 material/labor ratio.

The final over-all escalation dollar value is computed based on the appropriate projected percentage increases and is included in the budget exhibits for the SCN appropriation. (See exhibit P-8 in Appendix A.)

h. Future Characteristic Changes (FCC)

Under the end-cost concept, the Navy makes a commitment to the Congress to deliver the ships in the program for the amount appropriated for that program. The estimate,

therefore, must include all the funds required to complete the program, including a projected growth for future characteristic changes.

Ship characteristics are established by the Ship Acquisition Review Council (SAIC). The end-cost estimates contain provision for changes in characteristics during the construction period. The amount reserved for this purpose depends on basic construction or conversion cost, numbers of ships in the project, the developmental nature or complexity of the ship and the likelihood of incorporating new capabilities into the ship during construction or conversion. In order to qualify for SCN funding, characteristics changes must be approved and funded by SAIC prior to completion and accomplished prior to expiration of the SCN funding period [42: p. 6]. Other changes in characteristics, regardless of priority or sponsorship, are not eligible for SCN funding.

The allowance for Future Characteristic Changes has been used to take advantage of technical breakthroughs, which make possible the installation of the latest electronics, communications and weapons systems equipment on ships still under construction or conversion. These allowances have also been used to make changes dictated by revised operational requirements, such as a modification in mission, increased crew size, or changed habitability requirements on ships still under construction or conversion, only as authorized by the Chief of Naval Operations [28: p. 04-9].

The amount of FCC funds authorized by the Chief of Naval Operations is based on estimates furnished by the Ship Acquisition Project Managers (SHAPMs). These amounts, included in the end-cost estimate, are shown as a line item in the applicable SCN Analysis of Ship Cost Estimates (Budget Exhibit P-8) and are periodically updated by NAVSEA.

i. Project Manager's Growth

Cost growth is a term related to the net change of an estimated or actual amount over a base figure previously established. The base must be relatable to a program, project or contract and be clearly identified, including resource, approval authority, specific items included, specific assumptions made, date and the amount [27: p. 44]. The events causing cost growth must be explained by one or more of the following categories and the appropriate amount of each shown as "estimated" or "actual" [56: p. 4B-2].

Categories

- System Performance Change
- Engineering Change (not affecting performance)
- Quantity Change
- Quantity Change
- Contract Added Support
- Schedule Change
- Unpredictable Change
- Economic Change
- Estimating Change
- Contract Price Adjustment

The three major direct causes of cost growth in a weapons system are; low cost estimates, inflation and system and program changes [19: p. 51].

The budgeted allowances for project manager's growth includes priorities for electronics and weapons growth for anticipated increases in cost due to the rising costs of labor and material in these areas. The allowance covers escalation from the time of the estimate until the time the equipment is finally purchased.

Cost growth is requested as a separate line item annually, to the extent sufficient resources do not exist within current appropriated amounts. (See Appendix A, Exhibit P-8.)

j. Claims

The Ship Acquisition Project Manager (SHAPM) includes in his budget request the cost of contractor support for claims and of claims settlements, based on estimates provided by NAVSEA 02. The aggregate of the amounts budgeted for settlement of contractor claims is retained intact [42: p.6]. Although funds may be shifted among ship types, with NAVSEA 01 approval, they are not applied to any other requirement without approval of higher authority. The SHAPM is not necessarily expected to identify off-setting financial assets when estimated claim settlements exceed amounts budgeted. Any questions concerning disposition of overruns or underruns in the claims area are referred to NAVSEA 01 for appropriate action or referral to higher authority.

k. Cost Control--Minimization of Changes

Since changes to ships are frequently the cause of cost increases beyond the approved end-cost of ships, the Secretary of Defense has concluded that changes to approved ships need to be minimized. Aside from correction of errors or deficiencies, changes are limited to those that provide significant increases in cost-effectiveness by upgrading capability, achieving a substantial net life cycle cost saving to the Government, or a combination of both. Changes required for safety of personnel are also permitted. The control of costs emanates from the following procedures:
[28: p. 04-13]

(1) The cost of changes to characteristics are not charged to the SCN appropriation if approval of the characteristics change post-dates ship completion.

(2) In order to insure full consideration of the program end-cost effects, changes directed by the CNO are backed by formal changes in characteristics.

(3) Under end-cost budgeting, the introduction of all budgeted changes can not necessarily be undertaken. The Navy's commitment under the end-cost concept is to deliver all the ships in the SCN program for the total dollar amount appropriated; therefore, funds budgeted for future characteristic changes on a given ship, and shown as a part of the end-cost of that ship, may eventually be applied to other ships. In that event, it may not be possible to accomplish a given characteristic change on that ship.

(4) If unforeseen increases in costs arise due to changes in characteristics, equipments, escalation, or other reasons, the CNO will provide guidance on specific actions to be taken to remain within the total dollar amounts which have been appropriated.

1. Other Factors in Cost Control--GFM

The Navy has an extensive contractual obligation when it agrees to furnish material to a private shipbuilder. This obligation should not be assumed without thorough consideration being given to the question of whether the material can be delivered in time to meet the shipbuilder's construction schedule. NAVSEA's policy on single shipyard contracts is to reduce to an absolute minimum the material furnished by the Government. Government Furnished Material (GFM) is furnished only when it can be demonstrated that it is in the Government's best interest to do so.

2. NAVSEA Interaction

a. Ship Acquisition Project Manager (SHAPM)

The SHAPM is assigned the financial responsibility and associated authority for the acquisition of ships approved in the SCN appropriation [51: p. 6]. Each SHAPM collects, analyzes and evaluates all data necessary for the development of the best reasonable cost estimate for each ship under his cognizance. The cost estimates are the result of a team effort that culminates in budget submission data for his particular area of responsibility.

NAVSEA 01G is responsible for developing all of the estimates that will be required for each SHAPM program during all phases of the acquisition cycle [24: p. 19]. Each SHAPM collects all pertinent data for his budget estimate and submits the data to NAVSEA 012, the SCN Appropriation Division.

b. SCN Appropriation Division

The SCN Appropriation Division receives budget submission data from all of the Ship Acquisition Project Managers in the Naval Sea Systems Command. This data is developed and combined into a budget submittal presentation that includes all of the exhibits shown in Appendix A for each ship. This budget submittal presentation is initially prepared for the NAVSEA Budget Review Board [35: p. 2]. After review, appropriate changes are made and the SCN budget is presented to the Commander of the Naval Sea Systems Command, SEA 00.

3. NAVSEA Budget Review Board

The Budget Review Board is responsible for reviewing programming/budgetary submissions for the following appropriations: Research, Development, Test and Evaluation, Navy; Weapons Procurement, Navy; Other Procurement, Navy; Shipbuilding and Conversion, Navy; Operations and Maintenance, Navy; and Military Construction, Navy [35: p. 1].

The Chairman of the Budget Review Board is SEA 09. SEA 01, 03, 04, 06, 07, Deputy Commander for Submarines and the Deputy Commander for Surface Ships are designated as

permanent members of the Board. Other Deputy Commanders are designated as members of the Board when programs under their respective cognizance are considered. SEA 01F is designated as the Executive Secretary of the Board.

Specifically, the Budget Review Board reviews all NAVSEA programming/budgetary submittals prior to presentation to SEA 00 to insure that the proposed budgets are balanced, complete, accurate and are of a professional nature. The Board further checks for adequate rationale and justification for each submittal.

When the proposed SCN budget is approved by the Commander of the Naval Sea Systems Command, it is sent on up the chain of command. One copy of the SCN budget submittal is sent to the Naval Material Command for review and information and another copy is sent to NAVCOMPT.

C. SHIP COST ADJUSTMENT (SCA)

1. Definition and Objectives

The SCA report is prepared by the Commander, Naval Sea Systems Command and forwarded, after review by the chain of command, to the Comptroller of the Navy. The report, prepared twice annually--April and August--is the culmination of ship pricing analyses conducted for all ships and craft directly funded under the SCN appropriation [52: p. 1].

The SCA report provides an updated cost estimate of each ship program within the total shipbuilding program to all levels of management in the Department of the Navy. It provides data on which to balance the shipbuilding program

with the financial assets available. It serves as a baseline for internal management of the shipbuilding program within the Naval Material Command. Finally, the SCA report provides the current financial status of the SCN appropriation for the information of top management.

2. Procedures and Responsibilities

The Commander, Naval Sea Systems Command, under the direction of the Chief of Naval Material, is responsible for collecting, analyzing and evaluating all data necessary for the development of ship cost estimates, including an assessment of the current status of shipbuilding claims coverage [52: p. 2]. An SCA Summary Letter Report must be sent to the Chief of Naval Operations via the Chief of Naval Material. The Summary Letter Report contains the following information:

- (a) SCN funding deficiency or excess, current report.
- (b) SCN funding deficiency or excess, last report.
- (c) Principal reasons for SCA increases or decreases.
- (d) Sources available for reprogramming or recoupment of funds.
- (e) Recommended liquidation of funding deficiencies or application of funding excesses, including reprogramming in process.
- (f) Impact of funding deficiencies, if any, on future budgets.
- (g) An assessment of current status of shipbuilding claims and claims coverage.

The actual Ship Cost Adjustment procedures within NAVSEA are listed below: [42]

- (a) All estimates for ships in currently active programs are reviewed twice a year to provide an updated cost estimate for each ship and to show the current financial status of the SCN appropriation.

- (b) SHAPMs develop the proposed SCA changes based on information obtained from NAVSEC, Project Managers, Syscoms and other participating managers.
- (c) SHAPMs forward the proposed SCA changes to SEA 012 in the format shown in Figure 24.
- (d) SHAPMs must explain to SEA 012 why the participating managers' planning estimates are not in the report, if they are missing.
- (e) SEA 012 reviews the proposals and develops recommendations for presentation to SEA 01.
- (f) SEA 01 reviews the recommendations with representatives of the SHAPMs and the participating managers if estimates under their cognizance are to be discussed.
- (g) After review by SEA 01, the SCA recommendations are presented to SEA 00 for consideration and approval.
- (h) SEA 012 advises SHAPMs of all changes resulting from reviews.
- (i) SEA 012 prepares a letter to CNO via CNM outlining the result of the review.
- (j) The Chief of Naval Material reviews the SCA report for approval.
- (k) The Chief of Naval Operations reviews the SCA report. Specific decisions are made at this time on significant questions of policy or program content. These decisions are transmitted to the Comptroller of the Navy and the Chief of Naval Material.
- (l) The Chief of Naval Material, after receiving the decisions of the CNO, prints Program Cost Detail Sheets that reflect those decisions [52: p. 3]. Budget Exhibit P-8 (Analysis of Ship Cost Estimates), containing the estimate approved by the Congress, the last OSD approved estimate, the current estimate and an explanation of changes, is the format used. Distribution is made to all cognizant Navy offices.

The April and August reports provide a "baseline" for use in developing, respectively, the apportionment request and the succeeding year's budget submission to NAVCOMPT and OSD.

3. Schedule

The SCA report is prepared twice a year and conforms to the following schedule published by SEA 012 [38].

	<u>1 April SCA</u>	<u>1 August SCA</u>
012 Call	24 Dec.	25 April
Proposed SCA changes to 012	21 Jan.	24 May
01 Review	10-28 Feb.	10-20 June
Letter to CNM	1 March	1 July
CNO decisions to NAVCOMPT & CNM	1 April	1 Aug.
Detail Report	7 April	7 Aug.

D. FURTHER BUDGET REVIEW LEVELS AND DECISIONS IN THE CHAIN OF COMMAND

1. OPNAV/NAVCOMPT Review

The first comprehensive review of the SCN budget proposal from NAVSEA occurs at the CNO/NAVCOMPT level. Due to the lack of time for an in-depth review, joint hearings and joint analyses are made concurrently by the two review staffs of the Director of Budget and Reports, NAVCOMPT (NCB), and the Director of Fiscal Management, CNO (OP-92).

a. Budget Review Meetings

The budget review meetings are conducted in August. Included in the review with the staffs previously mentioned are the CNO Executive Board and the Chief of Naval Material. The Chief of Naval Material advises on any proposed adjustments in estimates submitted by the six functional commands. At this time, the SCN budget proposal is a part of

an over-all budget that is being reviewed for eventual submission to the President. The review conducts a thorough analysis of the estimates and supporting material.

The primary purpose of the NAVCOMPT review is to stress balanced resources, economic feasibility, time phasing and other budgetary aspects of programs set forth in the POM [21: p. 99].

b. Procedures

In reviewing the budget, the Office of the Comptroller is responsible for raising fundamental program questions bearing on the budget and for pointing out the budget implications of the various programs. The SCN budget is reviewed during the review of the procurement category. For evaluation of procurement budgets, unit cost data on items to be procured are usually available from information in the cost accounting systems or from contractual experience. In the case of newly procured items, engineering cost estimates can usually be made with reasonable accuracy, but as mentioned previously in the shipbuilding program, estimating is difficult. Of course, it is reasonable to expect that the Comptroller Review personnel are already aware of the SCN budget submittal content so there are not too many real surprises at this level of review.

Many factors are used to evaluate procurement budgets. Among these factors are unit costs, inventory of material on hand or funded, the method of computing requirements for peacetime consumption and mobilization base,

requirements for spare parts, status of development and evaluation, time phasing and rate of production and lead time.

c. Mark-up

After completion of the review by the Comptroller, The Director of Budget and Reports prepares a recommended budget "mark-up." The mark-up consists of revised estimates to the budget based on the review. The revisions may involve increases or decreases in budget proposals.

Following issuance of the mark-up, the Director of Budget and Reports reviews the recommended changes with the Deputy Comptroller and the Assistant Secretary of the Navy for Financial Management (Comptroller) to resolve differences. The marked up budget is then returned to the CNO and to the Systems Commands to adjust differences between original estimates and the mark-up. Major differences at this stage of the review process become the basis for the preparation of reklamas on the mark-up recommendations. A reclama is an appeal for reconsideration of any action, such as a request to restore all or part of a reduction in a budget estimate made by a higher review level [27: p. 168]. The mark-up is also submitted to the Secretary of the Navy for his decision.

A typical schedule for this level of budget review that leads to the SECNAV budget decision is shown below.
[30: p. 1].

10 Sept., 0900 - 1100	NAVCOMPT present mark-up to SECNAV/CNO.
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17 Sept., 1000 - 1200 SECNAV review of major budget issues by appropriations.

18 Sept., 1530 - 1730 SECNAV review of major budget issues by appropriations.

2. SECNAV Budget Decision

The Chief of Naval Operations and the Secretary of the Navy are aware of budget developments throughout the year. During the long preparation and review cycle within the Navy, they frequently discuss budget matters with the Office of the Secretary of Defense, the Office of Management and Budget and Congressional committees. These officials are well aware of major budget issues before receiving the issues for decision. As a consequence, they are in a position to make decisions promptly when the issues are placed before them. This is usually done at SECNAV Policy Council meetings attended by the Secretary, Assistant Secretaries and the Chief of Naval Operations.

Once all issues have been resolved, the budget is revised as necessary to reflect those changes. The decisions of the Secretary of the Navy are final insofar as the Department of the Navy is concerned and are communicated to all headquarters echelons concerned with budget preparation.

3. OSD Budget Preparation

NAVSEA receives all of the pertinent changes from NAVCOMPT that were based on the NAVSEC decision and incorporate these changes into the SCN budget. This revised SCN budget is then forwarded to the Office of the Secretary of Defense in the first part of October.

4. SECDEF and OMB Review

The Offices of the Secretary of Defense and the Office of Management and Budget normally make a joint review of the budget submitted by the military departments. This is done in the interest of the conservation of time. The review is mainly concerned with obtaining the best possible balance among all Defense programs as well as individual appropriation requests. All estimates are thoroughly examined, and in the case of procurement, of which the SCN appropriation is a part, such aspects as pricing, production, scheduling, Research and development status, priority of requirements, conformance with established logistics guidance and availability of substitute items are considered and analyzed.

OMB analysts participate in the review process and have the authority to submit separate decisions on mark-ups if they disagree with decisions rendered by the Office of the Secretary of Defense.

The review is conducted by means of hearings and informal discussions. Witnesses from the Department of the Navy appear and justify their estimates. The hearing schedule for the FY 1978 budget review for the SCN appropriation is shown below [12: p. 2].

<u>Appropriation</u>	<u>Date</u>	<u>Time</u>	<u>Room</u>	<u>OSD Chairman/ OMB Representative</u>
Shipbuilding & Conversion, Navy				
Aegis Ships	14 Oct	0900-1700	IE801	
Mine Warfare &	15 "	0900-1400	"	
Patrol Ships				

<u>Appropriation</u>	<u>Date</u>	<u>Time</u>	<u>Room</u>	<u>OSD Chairman/ OMB Representative</u>
Cost Growth, Escalation, Claims	18 Oct	0900-1700	IE801	
CVN/SSN	20 "	1300-1700	"	
Trident	20 "	0900-1200	"	
Aux. Craft, Outfitting, Post Delivery	22 "	0900-1700	"	
Shipyard Capacity & Navy Yard Construction	26 "	0900-1700	"	

5. Program Budget Decision

On the basis of this review, tentative budget decisions are made by the Secretary of Defense. These are received by the Secretary of the Navy to afford him the opportunity to appeal each decision with which he does not agree. He does so by submitting to SECDEF a position paper or reclama prepared by the responsible Department of the Navy organization. For the SCN appropriation, this would be NAVSEA.

The Secretary of Defense considers the reclaims and issues another tentative budget decision that becomes final if not appealed. This final decision becomes the Program Budget Decision (PBD). It addresses specific budgetary issues and is related to the appropriations and budget activity structure of the Department of Defense. Program Budget Decisions include the budget year and prior years, as appropriate. The decision record of the PBD will also include an estimate of the impact of the PBD on the next program year [15; p. 24].

6. The President's Budget

After the final Program Budget Decisions are incorporated into the Defense budget, it is forwarded to the President. In making final decisions on the Defense budget, the President usually confers with the Director of the Office of Management and Budget, the Secretary of Defense, the Joint Chiefs of Staff and the National Security Council. As finally approved, it then becomes the President's budget, and its content may or may not be in accord with the views of top personnel within a particular department.

Once final decision has been made on the budget, OMB compiles the budget document for printing and presentation to the Congress. As approved by law, the budget must be forwarded within the first 15 days of each regular session of Congress [15: p. 32]. The President's budget message to Congress, which explains the proposed fiscal policy of the Government for the budget year, is included in the printed budget.

IV. CONGRESSIONAL APPROVAL

The objective of Congressional review is to determine the funds Congress deems are required to carry out the Administration's proposed programs in the most efficient and economical manner.

After the President presents the budget to the Congress, Congressional staffs review the over-all budget and back-up papers briefly prior to Congressional review, which begins in February.

Hearings begin with "posture" statements from SECDEF, the Chairman of JCS, Service Secretaries and Service Chiefs made to the Congressional committees. Following delivery of posture statements, detailed hearings involving the Service's witnesses are initiated.

A. NAVSEA PREPARATION FOR CONGRESSIONAL HEARINGS

The Director of Congressional and Public Affairs (SEA 00D) is responsible for coordinating legislative affairs and Congressional relations for the Naval Sea Systems Command [36: p. 2]. He serves as the Liaison Officer with the Navy's Office of Legislative Affairs. The Office of Legislative Affairs (OLA) is charged by the Secretary of the Navy to be the single point of contact for the Congress, with two exceptions, the House Appropriations Committee and the Senate Appropriations Committee [54: p. 2]. These two committees

conduct their business with the Office of the Comptroller of the Navy and deal largely through the Appropriations Committee Liaison Office (NAVCOMPLIA).

NAVSEAS Liaison Officer with NAVCOMPLIA is the Comptroller (SEA 01). He is responsible for carrying out the functions assigned by the Comptroller of the Navy in the area associated with the Appropriations Committees.

Since NAVSEA views authorization and appropriation legislation as inseparable, SEA 01 and SEA 00D maintain the close coordination in Congressional matters affecting appropriations and the budget.

One other member in the chain pertaining to Congressional hearings is the Congressional and Policy Coordination Branch (OP-906). OP-906 works for the Director of Navy Programming who works for the Chief of Naval Operations. OP-906 decides who in the Navy would be most likely to have the requested information for Congress and forwards it to the designated office for staffing and research [3: p. 23]. The types of items that might pass through this chain are requests for information, requests for briefings of committees or committee staff members (or individual Congressmen), review and editing of hearings, records and additional material of interest to Congress.

When representatives of NAVSEA are tasked with appearing as a witness before Congress, they are urged to familiarize themselves with the content of all pertinent posture statements, such as those of the Secretary of Defense, the Secretary

of the Navy, the Chairman, Joint Chiefs of Staff and the Chief of Naval Operations, and to carefully review procedures regarding rehearsal of the presentation, preparation of a formal statement and review of transcripts. The rehearsal of the presentation involves the Program Manager in a presentation of a potential Congressional brief before senior personnel from either NAVSEA or from OPNAV. The members attending the presentation are supposed to insure that the witness is well prepared.

Other options open to Program Managers in preparing for a hearing are to study the prior year's records of hearings and reports, seek advice from others who have testified recently and prepare for Congressional interactions by researching the backgrounds and interests of the people before whom they are going to speak. Ideally, the witness could have a common presentation for all four of the Congressional committees. The Navy supports this idea by instructions: "There should be common preparation for appearances before the Armed Services and Appropriations Committees or their respective Subcommittees" [54: p. 3].

If a NAVSEA witness appears before a Congressional committee or meets with an individual Member of Congress or his staff in connection with a hearing or briefing where a SEA OOD, OLA, or NAVCOMPT representative is not present, the witness will prepare a memorandum for record [36: p. 4]. This memorandum provides the above mentioned representatives with the information they require to stay up-to-date with

Congressional inquiries. The memorandum covers the major points discussed and sufficient reference to questions and answers to provide a basis for further discussions which may occur.

A final item involved in the presentation of Congressional hearings is the backup material and point papers. NAVSEA requires that backup material and point papers will be prepared for use by witnesses at Congressional Armed Services and Appropriation Committee hearings [40: p. 1]. Point papers are also prepared for CNO backup files which contain material for the use of SECNAV and CNO during Congressional hearings. The point papers serve as an immediate source of concise, factual information on a wide variety of defense-related topics. As an example, SEA 012 is responsible for developing and maintaining the point paper entitled "Total SCN Program."

B. AUTHORIZATION AND APPROPRIATION OF THE SCN PROGRAM

Congressional review of the Defense budget is undertaken from the separate standpoints of authorization of programs and appropriation of funds. Before the Department of Defense can spend money on weapons systems, Congress must grant authority to carry on specific programs and appropriate funds to pay for each authorized activity. The SCN appropriation is one of those procurement items that requires both authorization and appropriation. Authorizing legislation is prepared by the Armed Services Committees of the House and Senate and the appropriation legislation by the Defense Subcommittees of the House and Senate Appropriations Committees.

1. Authorization

The authorization process begins in the House of Representatives in February with review by the Armed Services Committee. The first step of the hearings is a series of posture statements on the total DOD program and the funds required to support it, with the testimony being presented by the Secretary of Defense, the Secretary of the Navy and the Chief of Naval Operations. Subsequently, other officials appear before the Committee to support specific appropriations. The principal witness for SCN, as appropriation sponsor, is the Deputy Chief of Naval Operations (Surface) (OP-03). He is accompanied by supporting witnesses, including the Commander, Naval Sea Systems Command; the Director, Strategic Systems Project Office (SSPO); and the Director of Budget and Reports, Office of the Navy Comptroller [37].

When the House Armed Services Committee completes its hearings, it publishes a report containing Committee recommendations and brings before the House of Representatives an authorization bill based on those recommendations.

The DOD SCN budget request for FY 77 is shown in Figure 25 [60: p. 2555]. This request was presented to the House Armed Services Committee by military witnesses, and the resultant House-passed recommendation was \$7,378,300,000 [59: p. 933]. As can be seen from Figure 25, this was considerably more than requested.

President's Budget - Shipbuilding
and Conversaion, Navy (SCN)

	<u>No.</u>	<u>Net Funding Request</u> (\$ in millions)
Trident (SSBN)	1	\$791.5
Attack Submarine (SSN)	3	958.7
Aircraft Carrier (CVNX)	-	-
Strike Cruiser (CSGN)	-	170.0
Guided Missile Destroyer (DDG-47)	1	858.5
Guided Missile Frigate (FFG)	8	1179.5
Fleet Oiler (AO)	1	102.3
Destroyer Tender (AD)	1	260.4
Submarine Tender (AS)	1	260.9
Fleet Tug (T-ATF)	-	-
Ocean Surveillance Ship (T-AGOS)	-	-
Assault Craft	-	7.5
Service Craft	-	6.0
Outfitting/Post Delivery	-	71.0
Cost Growth	-	533.7
Escalation	-	1089.5
TOTAL	16	\$6289.5

Figure 25

The House-passed bill is considered by the Senate Armed Services Committee, hearings are held, the Senate Committee reports to the Senate and the full Senate passes a bill.

The hearings in the Senate are much the same as those of the House. The same budget request is proposed and the witnesses in many cases may be the same. The primary witnesses during the Senate hearings associated with Figure 25 were Vice Admiral J. H. Doyle, Jr., Deputy Chief of Naval operations, and Vice Admiral R. C. Gooding, Commander, Naval Sea Systems Command. They were accompanied by many other witnesses, mainly from the Office of the Chief of Naval Operations and the Naval Sea Systems Command.

On 4 May 1976, the Ford Administration amended its fiscal 1977 Defense budget request by adding 5 more ships to the original proposal. The new authorization request was now for 21 ships at a cost of \$7.3 billion. This action required approval from the Armed Services Committees of the House and Senate. The final outcome is shown in Figure 26 [1: p. 14]. This final authorization established ceilings for quantities and for amounts to be appropriated by the Appropriations Committees.

2. Appropriation

Essentially the same process is followed in the appropriation phase of review except that the SCN budget proposals go through the respective Appropriations Committees rather than the Armed Services Committees.

FY 77 SHIPBUILDING PROGRAM

<u>Ship</u>	<u>Amended Request</u>	<u>House Action</u>	<u>Senate Action</u>	<u>Final Bill</u>
Trident Submarine	1	2	1	1
Attack Submarine (SSN)	3	4	2	4
Aircraft Carrier (CVNX)	1	1	0	1
Guided Missile Destroyer (DDG-47)	1	0	1	0
Guided Missile Frigate (FFG)	12	4	8	8
Destroyer Tender (AD)	1	2	1	1
Submarine Tender (AS)	1	2	1	1
Fleet Oiler (AO)	2	2	2	2
TOTAL	21	20	16	17

Figure 26

Review of the over-all Federal budget by the House Appropriations Committee usually begins with hearings at which top officials of the Administration, such as the Director of the Office of Management and Budget and the Secretary of the Treasury, testify on broad questions of national fiscal policy.

After the initial hearings, the Department of Defense Subcommittee begins its review with a series of top level hearings that include high ranking members of the Department of Defense. They explain the total Defense program and the funds required to support it.

Following the over-all hearings, the Subcommittee considers individual appropriations such as that for procurement, which includes the SCN appropriation. After completion of the hearings, the Subcommittee presents a Full Committee Print of the proposed bill to the Appropriations Committee for approval.

The final stage of approval is on the House floor where the bill is debated and passed with any amendments that may have resulted from the review process.

The Senate Appropriations Committee uses the House bill and the President's budget as the basis for their review which is essentially the same as in the House of Representatives.

The Administration's Fiscal Year 1977 Defense request was for \$107.9 billion [6; p. 2563]. The final Defense appropriation approved by the House and Senate was \$104,343,835,000. This was a 3.3% reduction in the Administration's request, and

was \$1.05 billion less than had been approved by the House and \$330 million more than was voted by the Senate [58: p. 2459].

The 3.3% reduction in the budget recommended by the Department of Defense supports on the aggregate level the statement by J. Ronald Fox that "The budget recommended by DOD is affected very slightly by Congressional debate" [13: p. 126].

Congressional reductions in Defense funding proposals over the two decades 1950 - 1970 often amounted to less than 2%. Between 1961 and 1971 the reduction was always less than 5%, with the exception of 1970 when it reached 7%. In 1970, lengthy hearings and debate in both chambers of Congress led to a reduction of only 3% [13: p. 126].

The SCN portion of the approved Defense appropriation for Fiscal Year was \$6,195,000,000.

Following passage of the bill by Congress, it is transmitted to the President for approval and signature. When signed, the bill becomes an Act of Congress referred to as the Department of Defense Appropriations Act.

3. The Appropriations Act

The Appropriations Act lists those funds available for use by the Department of Defense. Actual release of the funds is achieved through the apportionment process.

The Appropriations Act for Fiscal Year 1977 was passed as Public Law 94 - 419, dated September 27, 1976 [7]. It makes appropriations for the Department of Defense for the

fiscal year ending September 30, 1977. The preamble to the Act is as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for the fiscal year ending September 30, 1977, for military functions administered by the Department of Defense, and for other purposes namely:....

The Act continues on by listing all pertinent appropriation categories and their associated funding. The text of the appropriation for Shipbuilding and Conversion, Navy appears below [7: p. 9].

"Shipbuilding and Conversion, Navy

"For expenses necessary for the construction, acquisition, or conversion of vessels as authorized by law, including armor and armament thereof, plant equipment, appliances, and machine tools and installation thereof in public and private plants; reserve plant and Government and contractor-owned equipment layaway; procurement of critical, long leadtime components and designs for vessels to be constructed or converted in the future; and expansion of public and private plants, including land necessary therefor, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title as required by section 355, Revised Statutes, as amended; as follows: for the Trident submarine program, \$791,500,000; for the SSN-688 nuclear attack submarine program, \$958,700,000; for the CG-26 U.S.S. Belknap conversion program, \$213,000,000; for the CVN nuclear attack aircraft carrier

program, \$350,000,000; for the U.S.S. Long Beach conversion program, \$371,000,000; for the FFG guided missile frigate program, \$1,179,500,000; for the AD destroyer tender program, \$260,400,000; for the AS submarine tender program, \$260,900,000; for the AO fleet oiler program, \$102,300,000; for service craft, outfitting, post delivery, cost growth, and escalation of prior year programs, \$1,707,700,000, in all: \$6,195,000,000, to remain available for obligation until September 30, 1981: Provided, That none of the funds herein provided for the construction or conversion of any naval vessel to be constructed in shipyards in the United States shall be expended in foreign shipyards for the construction of major components of the hull or superstructure of such vessel; Provided further, That none of the funds herein provided shall be used for the construction of any naval vessel in foreign shipyards."

4. Reprogramming

Reprogramming is the transfer of funds between two programs of an appropriation or between appropriations. This shifting of funds from the original purpose for which they were justified to Congress may be inevitable due to unforeseen events. The Congressional committees concerned with authorization and appropriations have generally accepted the view that rigid adherence to the amounts justified for budget activities or programs may unduly jeopardize the effective accomplishment of planned programs. For this reason, reprogramming procedures have been developed. These reprogramming procedures allow Congress to maintain control over the

utilization of Defense appropriations, thus, reprogramming involves the serious question of keeping faith with Congress.

Proposed reprogramming actions must have the specific approval of the Secretary of Defense or the Deputy Secretary of Defense prior to their being submitted by the Secretary of Defense to the House and Senate Committees on Armed Services and/or the House and Senate Committees on Appropriations for their approval [11: p. 2]. •Prior committee approval is required for desired alterations of the Shipbuilding and Conversion, Navy appropriation irrespective of the amount involved. An increase of \$5 million or more in a procurement line item or the addition to the procurement line item data base of \$2 million or more requires notification to Congressional committees [10: p. 4]. These monetary levels are known as thresholds.

Several reports are required with respect to reprogramming actions. These reports are called "Base for Reprogramming actions," "Reprogramming action," and "Report of Programs."

The "base for reprogramming actions" is established immediately after final Congressional action on fund authorizations and budget requests. It identifies the purposes, in terms of items or activities measured in quantities and amounts, for which funds have been authorized and appropriated. The report on the base for reprogramming actions" (DD Form 1414) is prepared and submitted to the Assistant Secretary of Defense (Comptroller) for prompt transmission to the appropriate House and Senate committees [10: p. 2].

A separate "Reprogramming Action" (DD Form 1415) is prepared and submitted to the Assistant Secretary of Defense (Comptroller) for each proposed reprogramming action requiring prior approval or notification of one or more Congressional committees. When approval is received from the appropriate committees, the Deputy Assistant Secretary of Defense (Program/Budget) will advise the Naval Sea Systems Command, in writing, the extent to which reprogramming action with respect to the SCN appropriation may be implemented. The Naval Sea Systems Command must be careful not to commit or obligate any funds based on reprogramming prior to committee review and approval. The House Committee on Appropriations will not approve any reprogramming request where such commitments or obligations have transpired. They view an obligation of funds prior to committee consideration as a preemption of the committee option to deny the request, thus impinging on committee rights and the responsibilities of Congress.

The third report, "Report of Programs" (DD Form 1416), is a semi-annual report used to list all reprogramming actions approved by the Secretary or Deputy Secretary of Defense and the Assistant Secretary of Defense (Comptroller). It serves as a summary reflecting all reprogramming actions previously submitted to Congress.

V. SCN BUDGET EXECUTION

Budget execution is the final phase of the budget process. It is the process established to achieve the most effective, efficient and economic use of financial resources in carrying out the program for which the funds were approved. It covers a lengthy time span, is initiated by required procedures and is implemented by a vast number of people.

Procedures that initiate the budget execution process include three steps necessary to make funds appropriated to the Navy available for commitment, obligation and expenditure. These are: a receipt of a copy of an Appropriation Warrant, approval of the request for apportionment of funds and approval of budget activity allocations within the SCN appropriation.

The Appropriation Warrant is issued by the Department of the Treasury for the purpose of implementing an appropriation act. The warrant includes the appropriation symbol and the amount stipulated in the act. It makes appropriated funds available for apportionments and allocations under which obligations may be incurred and expenditures made.

The budget execution process is implemented throughout the entire Department of the Navy.

A. SCN APPORTIONMENT PROCEDURE

An apportionment is defined as a determination and limitation by the Office of Management and Budget as to the amount

of obligations or expenditures which may be authorized to be incurred during a specified period. An apportionment may either limit all obligations incurred, or obligations to be incurred for an activity, function, project, object, or combination thereof.

The apportionment cycle begins with general guidance from the Office of the Secretary of Defense in April or early May. The Assistant Secretary of Defense (Comptroller) requires the submission, by early June, of financial plans and other supporting budget exhibits for review by his staff in anticipation of the formal submissions of a fund apportionment request based on the enacted appropriation. The entire process amounts to a complete resubmission of the proposed budget, accompanied by other documents associated with apportionment only. The plans submitted must reflect any action by the Congressional committees to the extent that it is known at the time of submission. When OSD guidance is promulgated, NAVCOMPT issues a call for the preparation and submission of apportionment material to NAVSEA for the SCN appropriation. NAVCOMPT requires that the material be submitted in sufficient time for review prior to the May submission to the Assistant Secretary of Defense (Comptroller). The time frame established allows everyone concerned to be prepared for the submission of the formal funds apportionment request subsequent to the passage of the Appropriation Act. The formal request will reflect the latest guidance from the SCN appropriation sponsor, the Deputy Chief of Naval

Operations (Surface) (OP-03), and the current estimates of requirements.

After passage of the Appropriation Act, the Office of Management and Budget, acting for the President, determines apportionments and returns approved requests with any comments, via the Secretary of Defense, to the Comptroller of the Navy. The latter then forwards the approved requests to the Naval Sea Systems Command via the Chief of Naval Material for the SCN appropriation.

Receipt of the approved apportionment with allocations means that funds, in the amounts and under the conditions set forth, have been released and are available to the responsible components for commitment and obligation for the purposes specified in the appropriation.

1. Apportionment Submission

All SCN-funded ship construction and conversion projects must be supported by a financial plan developed by each Ship Acquisition Project Manager (SHAPM). The financial plan lists detailed obligations within the SCN appropriation and serves as a basis, to the extent practicable, for all financial planning and submissions required under the SCN program. These not only include apportionments, but budget submissions and SCA reviews as well. The financial plans are normally submitted as part of the apportionment backup material.

Initial requests for apportionment or for revision of apportionments are made on Apportionment and Reapportionment Schedule (DD Form 1105) which is prepared by SEA 012 and

submitted to the Comptroller of the Navy, via the Chief of Naval Material, for approval [44; p. 1-25]. Appendix D contains a sample DD Form 1105 for the SCN appropriation along with the associated Program/Fund Allocation (NAVCOMPT Form 2058) to be discussed later.

The Navy review of the apportionment submission is similar to the budget review except the time frame is shorter. After obtaining SECNAV approval, NAVCOMPT forwards the financial plan/apportionment estimates to the Office of the Secretary of Defense. Joint hearings on the proposed apportionment are conducted by Assistant Secretary of Defense (Comptroller) analysts and Office of Management and Budget examiners. The OSD analysts are concerned with the substantive detail of the apportionment request, as well as the dollar levels. Resulting recommendations are based on evaluations of program proposals as to feasibility, desirability, priority, timing, etc. After OMB approval of the Apportionment and Reapportionment Schedule (DD Form 1105), an apportionment for the year's operations is made available to the Secretary of the Navy. NAVCOMPT then allocates funds to the Chief of Naval Material for the SCN appropriation [37: p. 5].

The signatures on the DD Form 1105 in Appendix D represent the Assistant Secretary of Defense, the Assistant Secretary of the Navy and the Deputy Associate Director for National Security.

2. Allocation Requests

Apportionments and allocations serve different purposes. The purpose of an apportionment is to control the rate at which appropriated funds are obligated. The purpose of an allocation is to control the total amount of such funds that may be used for a particular budget activity during the year. The annual apportionment for SCN is allocated to the five budget activities of the SCN appropriation.

Requests for budget activity allocations are submitted to the Comptroller of the Navy on NAVCOMPT Form 2058, Program/Fund Allocation. The budget activity accounts are used for administration, accounting and control of the SCN appropriation. The amounts available under each account are established by the Comptroller of the Navy on the basis of requests submitted by the Naval Sea Systems Command.

For the apportionment process, the NAVCOMPT Form 2058 is submitted with the DD Form 1105 to the Comptroller of the Navy. When the approved DD Form 1105 returns to NAVCOMPT from OMB, NAVCOMPT takes action on the Program/Fund Allocation (NAVCOMPT Form 2058). The approved NAVCOMPT Form 2058 reflects the Program/Fund Allocations in accordance with the DD Form 1105, Apportionment and Reapportionment Schedule. It specifically reflects adjustments to estimated unobligated balances, changes to OMB reserves and reductions in the Reimbursable Program and Allocation totals.

The allocation made by the Comptroller to the CNO, designated as the responsible office for SCN, is passed in

its entirety to the Chief of Naval Material, who is designated as the principal administering office. CNM suballocates the funds to NAVSEA.

Referring to Appendix D, the DD Form 1105 reflects total apportionments and total budgetary resources of \$394,992,030. This value is the subtotal apportioned available on NAVCOMPT Form 2058; \$86,800,000 was deferred, leaving total financial resources of \$308,192,039 for the SCN appropriation. The funds flow for the SCN appropriation is depicted in Figure 27.

B. AUTHORIZATION OF FUNDS

SCN funds are made available to SHAPMs at the budget project level by NAVCOMPT Form 2236, Advice of Project Funds. They are then distributed, with SHAPM approval, to various performing activities by appropriate funding documents such as allotments, project orders, work requests and Ship Project Directives (SPDs). The current Ship Project Directives are divided into two parts. Part I is used for tasking and Part II (NAVCOMPT Form 2252) is used as a funding document in SCN. This is a recent change in funding procedure within NAVSEA [38: p. 11].

All forms are routed through the cognizant SEA 01 appropriation division. Specific appropriation divisions have been established for each budget appropriation within SEA 01, Plans Programs and Financial Management/Comptroller. After review by the cognizant SEA 01 appropriation division, the forms are delivered to SEA 0183, the Field Funding Operations Branch,

FUNDS FLOW OF SCN APPROPRIATION

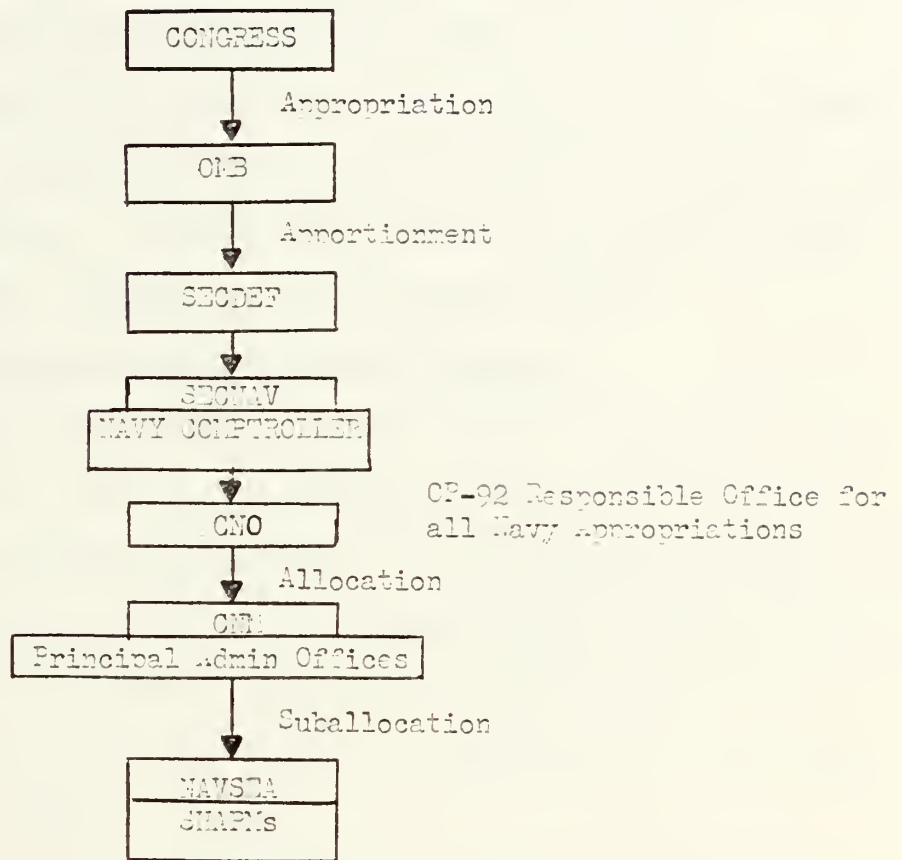


Figure 27

for processing and issuance of the applicable funding authorization. SEA 0183 will not release a field funding document, however, if it will cause the approved Command allocation to be exceeded.

The methods of funding for various activities associated with the SCN appropriation are shown below.

NIF activities are issued Work Requests or Project Orders. Work Requests, Project Orders, or Allotments are issued to the following activities: RDT&EN (NON-NAVSEA), Operating Forces, NON-NIF Activities, RDT&EN - RMS, and O&MN - RMS.

1. Allotment/Suballotment Authorization

Allotment/Suballotment Authorizations (NAVCOMPT Form 372) are generally issued under procurement appropriations for direct procurement of hardware, plant property, commercial services and material, and outfit supply [39]. Figure 28 is an example of an Allotment/Suballotment Authorization for the Dwight D. Eisenhower (CVAN-69) in the amount of \$400,000.

2. Project Orders

Project Orders (NAVCOMPT Form 2053) are used when requesting performance of work or services by an activity where the requirements of a project order can be met as outlined in the Navy Comptroller's Manual, paragraph 023403 [39]. Under the Shipbuilding Program in the SCN appropriation, a separate project order is issued for each ship to be constructed, converted or overhauled. Figure 29 is an example of a Project Order providing \$175,000. for the work described.

FROM: COMMANDER, NAVAL SEA SYSTEMS COMMAND
DEPARTMENT OF THE NAVY
WASHINGTON, D C 20362

TO:

[Supervisor of Shipbuilding,
Conversion and Repair, USN
Newport News Shipbuilding and Dry
Dock Company
Newport News, Virginia 23607]

(Activity Code)
6152 516

62793

TYPE OF AUTHORIZATION

☒ NEW ☐ AMEND. NO.

ALLIANCE ACCOUNTING OFFICE

ACCOUNTING NO. 189

(Name and address)

NSC NORVA

TITLE OF APPROPRIATION AND BUREAU

Shipbuilding and Conversion, Navy 8452

APPROPRIATION SYMBOL AND BUREAU
1721611

AUTHORIZATION

The total of this authorization is allotted to fund the purpose stated under "Instructions" and is subject to all limitations specified therein. All financial control, jurisdiction, and responsibility under Section 3079 R.S. and regulations thereunder, for the total amount allotted, is passed to the addressee. To accomplish the purpose of this allotment, amounts assigned to budget projects may be adjusted within the total limitation but cumulative adjustments to any one budget project totaling 10% or more must be reported to the allotter in accordance with NavCompt Manual, Volume 2.

PROJECT NO.	TITLE OR DESCRIPTION	PREVIOUS ADJUSTED AUTHORIZATION	AMOUNT OF THIS AUTHORIZATION
8452	DWIGHT D. EISENHOWER (CVAN-69) Ship Acctg No. 3369.		
60	This allotment is issued to provide		\$400,000.00
12561	funding in addition to those funds provided by Allotment No. 201 to cover the cost of GFE designated as Supervisor of Shipbuilding Furnished Material by references (a) and (b) for use in the construction of DWIGHT D. EISENHOWER (CVAN-69) at the Newport News Shipbuilding and Dry Dock Company.		
	NOT AVAILABLE FOR NEW OBLIGATIONS AFTER 30 JUNE 1976		
TOTAL			\$400,000.00

NOTE: This statement for information only.

"LW: Relates to ADP system still in effect for FY 1974 and prior years SHIPS programs. This document is for entry into the LW ADP system only."

INSTRUCTIONS:

- REF: (a) Schedule 'A' - List of Government Furnished Material for CVAN-68 dated 21 March 1967 (Includes Modifications Nos. 1 through 4)
- (b) Modification No. 5 to Schedule 'A' - List of Government Furnished Material for CVAN-68 dated 28 May 1970

PROJECT ORDER

NAVCORPT FORM 2053 (REV. 5-65)

0106-772-3303

NAVSHIP OVERPRINT 5-66

DUPLICATE

1. PROJECT ORDER NO.	4-0023
2. AMENDMENT NO.	NEW
3. CUMULATIVE TOTAL	\$175,000.00
4. DATE ISSUED	FFB/18/74
5. EXPIRATION DATE	6/30/74
6. TYPE	☒ COST REIMBURSEMENT ☐ FIRM-PRICE

NAME AND LOCATION

COMMANDER, NAVAL SEA SYSTEMS COMMAND
DEPARTMENT OF THE NAVY
WASHINGTON, D C 20360

B. PERFORMING ACTIVITY

A. NAME AND LOCATION	B. ACCT G. NO.	C. ACCOUNTABLE ACTIVITY
Commander Naval Ordnance Laboratory, White Oaks Silver Spring, Maryland 20910	60921	60921

9. ACCOUNTING DATA TO BE CHARGED

A. APPROPRIATION SYMBOL AND SUBHEAD	B. OBJECT CLASS	C. BUREAU CONTROL NO	D. ADP ACCT'G ACTIVITY	E. TRANS TYPE	F. PROPERTY ACCT'G ACTIVITY	G. COST CODE	H. AMOUNT
1741S10.81HK SUB PROJ. 001	025	44995 0	065872	2B	000000	000000000000	\$175,000.00

10. DELIVERY INSTRUCTIONS

A. PLACE	B. DATE	C. METHOD

11. DESCRIPTION OF WORK TO BE PERFORMED AND OTHER INSTRUCTIONS (If more space is required, attach additional sheets)

Funds are hereby provided to manufacture 200 Portable Covers in accordance with NOL drawings 73F2071 thru 73F2074. These funds include provisions for shipment, post installation analysis and surveys.

Forward acceptance copy to NMCSA 1231, Info NAVSHIPS 10241, *NAWSEC 6212B*

Copy to: NMCSA 1231, *SEA-0183* 041221
SEC 6232B4, 6212B

NOTE: This statement for information only.

"LW: Relates to ADP system still in effect for FY 1974 and prior years SHIPS programs. This document is for entry into the LW ADP system only."

DUPLICATE

REQUESTED	CODE	RECOMMENDED	CODE
David Springer	6232B4	<i>W E Benham Jr</i>	041221

12. This Order is placed in accordance with the provisions of 41 U.S.C. and applicable project order regulations. Work is to be performed and material to be procured pursuant to this Order are properly chargeable to the appropriation or other accounts indicated above until the expiration date of this Project Order. Funds in the amount shown under the block "Cumulative Total," have been committed and will be obligated upon receipt of the acceptance copy by the ordering component.

A. AUTHORIZING OFFICER (Typed name and title)

ILLUSTRATION #3b

B. SIGNATURE

H. L. NIXON

By direction of E. P. TRAVERS
Deputy Commander for Plans, Programs
and Financial Management/Comptroller

13. ACCEPTANCE (The above terms and conditions are satisfactory and are accepted)

A. DATE	B. ACCEPTING OFFICER (Typed name and title)	C. SIGNATURE

3. Work Request

Work Requests (NAVCOMPT Form 140) are used when requesting the performance of work or services by an activity and the requirements of the project order regulations cannot be satisfied [39]. Work Requests are issued at the ship level for the Shipbuilding Program (SCN). Figure 30 is an example of a Work Request, but it is for the Other Procurement, Navy (OPN) appropriation vice SCN. The form was included here to show format only.

6-6
WORK REQUEST
NAVY FORM 100 (REV. 5-63)

☒ INITIAL REQUEST

AMENDMENT NO.

Commander, Naval Sea Systems Command
Department of the Navy
Washington, D. C. 20362

WR - 4-7014

DATE
JUL 19 1973

Commander, Puget Sound Naval Shipyard
Bremerton, Washington 98314

MAXIMUM AMOUNT AUTHORIZED

\$16,500.00

APPROPRIATION SYMBOL AND BUREAU	OBJECT CLASS	BUREAU CONTROL NO.	AUTHORIZATION ACCT'S ACTIVITY	TRANS. TYPE	PROPERTY ACCT'S ACTIVITY	COST CODE
1741810.81HJ	025	309950	065872	2D	000000	000000000000
SEE ORDER NUMBER	COMPLETION DATE OR PERIOD OF WORK			FOR DETAILS, CONTACT:		
	30 June 1974			S. Keller 692-7077		

TYPE OF REQUEST

REQUESTING OFFICE (Signature and Title)

☐ CONTINUING ☒ SPECIFIC ☐ NUMEROUS

I. M. LONG

By direction of STANLEY S. FINE,

Deputy Commander for Plans, Programs,
and Financial Management/Comptroller

WORK TO BE PERFORMED IN ACCORDANCE WITH ABOVE INFORMATION

OPN 1974

Subhead & Operating Budget

Amount

81HJ

309950 Sub Proj 001

\$16,500.00

W.B.S. 2.1.2.2.1

This work request provides FY74 OPN funding in accordance with NAVSHIPYD PUGET ltr Ser 250.3-81 of 22 May 1973 in conjunction with the BSRV Project. Monthly technical status and funding reports shall be provided as in past years.

Forward acceptance copy to NMCSA 12262 and PMS395-P131 with information copy to NAVSHIPS 10241 within 30 days after date of issue.

NOTE: This statement for information only.

"LW: Relates to ADP system still in effect for FY 1974 and prior years SHIPS programs. This document is for entry into the LW ADP system only."

Copy to:

SEA-0183

SA 12262

PMS395-P111 (2)

PMS395-A23

VI. CONCLUSIONS

A. THE SCN BUDGET PROCESS

The formal SCN budgeting process has been discussed in a descriptive manner in this thesis through the three phases of formulation, justification and execution. The SCN appropriation was defined along with the many commands and offices directly involved in its control and administration. Cost estimating was addressed, and the referenced material on inflation and contract escalation is a logical next step for the student of the SCN process to continue research [57]. Other major areas of discussion included the Ship Cost Adjustment reviews, DOD budget review, Congressional review and approval and apportionment procedures. From review of this thesis it is easy to see how complex the entire process has become with the Congressional role being not the least significant. The review process requires direct participation by the highest officials within the Navy and involves many hours of testimony and thousands of pages of data. The eventual pinnacle point is a one-page summary in the Appropriations Act that influences millions of lives, that appropriates billions of dollars and signals only a short respite before the entire process must be repeated.

Although the Navy's shipbuilding budget is a relatively small part of the service's annual budget, the total number of ships is a prime determinant of much of the rest of the

Navy budget, such as operations and maintenance, weapons procurement and manpower. The shipbuilding decisions of today largely determine total Navy costs five and more years from now, with a continuing impact measured in decades.

B. COST ESTIMATES

The Naval Sea Systems Command has become very sensitive to the opinion that deficiencies in the estimating capability of NAVSEA might be the basic reason for the deficit status of the SCN appropriation. They have made many improvements in their cost estimating techniques, as discussed in this thesis, and are continually seeking new methods to improve budget estimates. A popular solution for improved accuracy is based on improved cost estimating techniques, cost accounting format and proposals for estimating by computers. NAVSEA has recognized these and many other areas that require improvement and has classified all of them under management as controllable and non-controllable areas in cost estimating. A concerted effort at research in both of these general areas could substantially improve the accuracy of cost estimates.

Inflation and escalation have been highlighted areas of concern to the cost estimators. The cost estimating system has proved relatively effective in times of regularized inflation patterns, but it failed to predict the high rate of inflation experienced in 1974. The problem of forecasting unexpected and unusual jumps in inflation continues to be with us; however, inflation forecasting and tracking efforts have allowed identification within the SCN appropriation of

the specific inflation impacts and estimating shortcomings. The NAVSEA methods of forecasting inflationary rates are continually monitored and improved as conditions warrant. A continuing dialogue with OSD analysts is maintained and OSD endorses the use of the NAVSEA-developed indices in the budget process.

APPENDIX A

Budget Exhibits for the Shipbuilding and Conversion, Navy Appropriation

P-1	Ship Procurement Program
P-2	Items Requiring Reprogramming
P-6	Procurement Program and Financing Summary (Apportionment Submission only)
P-35	Procurement Program for Major Ship Components
P-8	Analysis of Ship Cost Estimates
P-8A	Analysis of Ship Cost Estimates/Major Equipments
P-8B	Analysis of Cost Estimates-Basic/Escalation
P-9	New Construction and Conversion Program Data
P-9A	Service and Other Small Craft
P-10	Procurement of Advance Design and Material
P-10A	Ship Construction Plan
P-27	Ship Production Schedule
P-28	Test and Evaluation Schedules
P-29	Outfitting Costs
P-30	Post Delivery Estimates
P-36	Workload Data
P-42	Component Leadtime and Installation Schedule

PROCUREMENT PROGRAM

Date: _____

Appropriation: _____ Project/Activity: _____

(Millions of Dollars)

Line No.	Item Nomenclature	Ident. Code	FY BY Unit Cost	FY		FY		FY	
				Qty	Cost	Qty	Cost	Qty	Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

NOTE

This shall be submitted on paper 10½" in the vertical measurement only and 8" in width, if possible. If greater width is required, the paper shall be folded to an 8" width prior to submission.

Exhibit P-1F will be prepared in the same format as Exhibit P-1 but will include only telecommunications equipment. See Chapter 2B1.

EXHIBIT P-1

ITEMS REQUIRING REPROGRAMMING
(DD Form 1415)

Date: _____

Appropriation: _____ Project/Activity: _____

P-1 <u>Line No.</u>	<u>Item</u> <u>Nomenclature</u>	<u>President's Budget</u>		<u>Appor. Request</u>		<u>Difference</u>	
		<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>

INSTRUCTIONS

This format will be used in submitting apportionment requests to identify those items for which changes have occurred in the planned procurement program subsequent to the President's Budget that will require reprogramming action through submission and approval of DD Forms 1415. Off-setting line item decreases sufficient to cover all increased amounts will be identified.

Exhibit P-2

PROCUREMENT PROGRAM AND FINANCING SUMMARY

(Millions of Dollars)

Appropriation: _____

	<u>FY 19PY</u>	<u>FY 19CY</u>	<u>FY 19BY</u>
<u>Program by Activities</u>			
Direct:			
1.			
2.			
3.			
Etc.	_____	_____	_____
Total Direct Program	=====	=====	=====
Reimbursable:			
1.			
2.			
3.			
Etc.	_____	_____	_____
Total Reimbursable	=====	=====	=====
<u>Financing</u>			
Receipts and reimbursements from:			
Administrative budget accounts:			
Military Assistance Orders			
Other Accounts			
Trust Fund Accounts			
Non-Federal Sources			
Unobligated Balance available, start of year:			
Available to finance new budget plans			
Reprogramming from prior year budget plans			
Unobligated Balance available, end of year:			
Available to finance subsequent year budget plans	_____	_____	_____
New Obligational Authority	=====	=====	=====
Proposed Supplemental			

INSTRUCTIONS

Submit in six (6) copies for each apportionment request only. This form will show the total resources that will be available to finance the direct

EXHIBIT P-6

SHIPBUILDING AND CONVERSION, NAVY
MAJOR SHIP COMPONENT FACT SHEET
(\$ 000)

ITEM: (A separate sheet is to be submitted for each equipment having a unit cost of \$500,000 or more, all radars, sonars, fire control systems and missile systems)

I. Description/Characteristics/Purpose

II. Current Funding

	<u>FY 19PY</u>	<u>FY 19PY</u>	<u>FY 19CY</u>	<u>ETC.</u>
a. R&D Funding (P.E. #)				

	<u>FY 19PY</u>	<u>FY 19CY</u>	<u>FY 19BY</u>
b. SCN Funding			

Ship Type Total

Major Hardware (MK, Mod)

Ancilliary Equip

Systems Engineering

Documentation

Spares

Other appropriate costs
(including non-recurring)

This section of the exhibit will identify estimates in the year in which they were budgeted. If an equipment was procured in a prior year with advance procurement funds, it should be reflected on the exhibit in the prior year program.

The equipment costs in this section of the exhibit will include the same elements that are included in a P8A equipment cost estimate. However, because the P8A exhibit is prepared without regard to advance procurement funding, the costs in this exhibit will not necessarily relate year for year with those on the P8A.

The cost details will be provided for each ship type for which equipment is being procured.

III. Contract Data

<u>Item/ FY Program</u>	<u>Contractor</u>	<u>Type of Contract</u>	<u>Award Date</u>	<u>Date First Delivery</u>	<u>Qty</u>	<u>Unit Cost</u>
-----------------------------	-------------------	-----------------------------	-----------------------	------------------------------------	------------	----------------------

This section will be prepared for the major hardware procurement. The exhibit will include the contract plans for the budget year, the planned or actual contract information for the current year and the actual information for the last buy prior to the current year. The last buy should be included even though it is two or more years prior to the current year.

The following codes should be used for indicating contract types: Fixed Price Incentive (FPI); Cost Plus Incentive Fee (CPIF); Fixed Price (FP); Sole Source (SS); Competitive (C); etc.

[EXHIBIT P-35]

SHIPBUILDING AND CONVERSION, NAVY
MAJOR SHIP COMPONENT FACT SHEET
(\$ 000)

IV. Delivery Data

Appropriation/ FY	FY 19 1 2 3 4	FY 19 1 2 3 4	FY 19 1 2 3 4	ETC.
----------------------	------------------	------------------	------------------	------

This section should indicate delivery plans for the budget year, current year and prior year programs contained in Section II of this exhibit.

EXHIBIT P-35
(concluded)

SHIPBUILDING AND CONVERSION, NAVY ANALYSIS OF SHIP COST ESTIMATES

Date:

FY _____
(\$ Thousands)

Section I

Program Year	Ship Type	No. of Ships	Bld./Conv. Yard Location	Orig. COFO* Date Prev. Appr. Date Current Est. Date *Completion of Fitting Out	First Ship	Last Ship
				(i.e., approved in last budget)		

Section II

Breakdown of Estimate	Original Estimate Approved by Congress (For FY 1964 and subse- quent programs).	Last OSD Approved Estimate (Last apportionment P-8 or last budget P-8)	Current Estimate	Change Cols 1-3	Change Cols 2-3
	(1)	(2)	(3)	(4)	(5)

Plan Costs

Basic Const/Conv
Change Orders
Electronics
Propulsion Equipment
Hull, Mechanical, Electrical
Other Costs
Ordnance
Future Character Changes
Escalation Budgeted
Escalation Earned
Project Managers Growth Factor
Total Ship Estimate

To be submitted as backup for budget and apportionment requests. Summary of each year's program to be submitted in addition to individual ship project. Particular attention is to be placed on providing information in Section I of the exhibit.

INSTRUCTIONS

Hull by hull detail for the budget year request will be provided in the October budget submission, the Congressional submission in January and the apportionment submission. The exhibit will include a ship type total by cost code in addition to the hull by hull detail for each cost code. The funding section of the exhibit will relate to only the ship type total.

Funding

FY 1971 and prior
FY 1972
etc.

Funds included in the line "escalation budgeted" shall not be transferred to any line other than "escalation earned." The sum of the two lines shall equal the total amount budgeted for escalation.

TOTAL Funding

SHIPBUILDING AND CONVERSION, NAVY

ANALYSIS OF SHIP COST ESTIMATES - MAJOR EQUIPMENTS

(\$ 000)

Ship Type _____	19 PY		19 CY		19 BY	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
Electronics Equipment						
Ordinance Equipment						
Propulsion Equipment						
WME Equipment						

List the major equipments for each of these cost codes shown on the P-8 exhibit and include the next 10 high dollar value items. All other items can be summarized in one line item. System engineering, spares, documentation and other equipment costs should be included in the equipment estimate.

Weight and Space Reservation

<u>Nomenclature</u>	<u>Unit Cost</u>	<u>Total Cost</u>
---------------------	------------------	-------------------

List each item for which weight and space is being reserved. Asterisk those items for which funding is not reserved.

This exhibit should be completed for every ship in the 19 CY and 19 BY program.

EXHIBIT P-8A

SHIPBUILDING AND CONVERSION, NAVY

ANALYSIS OF SHIP COST ESTIMATE-BASIC/ESCALATION

FY _____

SHIP TYPE _____

I. Design Schedule

	<u>Start</u>	<u>Complete</u>
Preliminary Design		
Contract Design		
Issue date for TLR	XXXX	
Issue date for TLS	XXXX	

II. Classification of Cost EstimateIII. Basic Const/Conv

	<u>Mandays (Direct/Indirect)</u>
a. <u>Mandays</u>	<u>Hull</u> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>etc</u>

Budget Request	Indicate separate shipyards where appropriate.
----------------	--

Last Procurement/T&E Ship/Last similar ship	
--	--

b. Escalation Rate up to award date (identify for labor and material. Indicate labor/material split).
--

c. Assumed award date

d. Contract type (FP, FPI, MY, option, etc.)
--

e. Overhead Rate

IV. Escalation

Base Date
Base Cost for Escalation
if Quarters
Labor/Material Split

* This exhibit will be prepared for every ship type in the budget year request.

[EXHIBIT P-SB]

SHIPBUILDING AND CONVERSION, NAVY
NEW CONSTRUCTION AND CONVERSION PROGRAM DATA

<u>SCB No:</u>	<u>No. of Ships</u>	<u>Unit Cost (\$000)</u>	<u>Total Cost</u>
----------------	---------------------	--------------------------	-------------------

Lead

<u>Ship Type</u>	<u>Follow</u>		
	<u>Total</u>		

Mission:

Characteristics:

Hull

Length over-all
Beam
Displacement
Draft

Machinery

Shaft horsepower

Speed, sustained
Endurance
No. Shafts

<u>Prior .</u>	<u>Total</u>	<u>Number</u>	
<u>Program</u>	<u>Estimated</u>	<u>Complete</u>	
<u>Status</u>	<u>Cost (\$000)</u>	<u>As Of</u>	<u>Builder</u>

Production Status:

Contract Plans
Award Planned (Month)
Months to Complete
Commissioning Date
Completion of Fitting-Out

Accommodations:

Officers
CPO
Enlisted
Total

Cargo Capacity:

<u>Armament:</u>	<u>Range</u>	<u>Firing Rate</u>	<u>Height/Distance</u>	<u>Remarks</u>
------------------	--------------	--------------------	------------------------	----------------

<u>Major Electronics</u>	<u>Range</u>	<u>Maximum</u>	<u>Minimum</u>	<u>Remarks</u>
--------------------------	--------------	----------------	----------------	----------------

INSTRUCTIONS

Conversions (1) denote by asterisk any new armament or electronics added by conversion, and (2) list date of original ship completion and date of any prior conversion.

In addition to the P-9, a copy of the approved ship characteristics should be submitted for each ship in the budget year request.

EXHIBIT P-9

SERVICE AND OTHER SMALL CRAFT

(\$000)

Type of Craft and Description	Unit Cost	FY 19PY		FY 19CY		FY 19BY	
		Qty	Amt	Qty	Amt	Qty	Amt
YTB Harbor Tug	1000	2	2000	5	5000	6	6000

INSTRUCTIONS

All types of craft for which funds have been requested will be listed in this exhibit.

Asset Dynamics

	YTB	LCM	LCU
Inventory objective (units)	100	1200	200
Inventory on hand or on order beginning of period 7/1/BY	65	1100	120
Deliveries during period (BY)	15	100	80
Less losses during period (BY)	5	50	10
SEA	0	25	10
Other	5	25	0
Inventory on hand end of period 6/30/BY	75	1150	190
Surplus (+) or deficit (-)	-25	-50	-10
Requested procurement	5	50	10

INSTRUCTIONS

The asset dynamics table will include all craft for which funds are being requested in the budget year.

EXHIBIT P-9a

SHIPBUILDING AND CONVERSION, NAVY
PROCUREMENT OF ADVANCE DESIGN AND MATERIAL
(Fiscal Year)

Date:

Ship Type and Number of Ships:
First Ship Award Date:
First Ship Completion Date:

Interval Between Ship Completions (Months):

Item (a)	Quantity (b)	Type of Lead-Time (c)	Lead-Time in Months ADM/Prod. (d)	Date Contract Required (e)	Date Del. of First Equip. Required (f)	Months Between Start of Constr. & Req. Del. Date (g)	Unit Cost (In Thousands) (h)	Total Cost (i)
-------------	-----------------	-----------------------------	--	-------------------------------------	---	---	---------------------------------------	----------------------

INSTRUCTIONS

In cases where funds are being requested for advanced design, a narrative description of the extent of effort planned and milestone dates should be submitted.

EXHIBIT P-10

SHIPBUILDING AND CONVERSION, NAVY

SHIP CONSTRUCTION PLAN

Unawarded ships funded prior to budget year

<u>Ship</u> <u>Type</u>	<u>Original Planned</u> <u>Date for Ship Award</u>	<u>Current Planned</u> <u>Date for Ship Award</u>	<u>Original</u> <u>Delivery</u> <u>Date</u>	<u>Current</u> <u>Delivery</u> <u>Date</u>
----------------------------	---	--	---	--

INSTRUCTIONS

This section of the exhibit will be filled out for all ships funded in prior years but not awarded at the time of the submission.

EXHIBIT P-10a

SHIPBUILDING AND CONVERSION, NAVY

SHIP PRODUCTION SCHEDULE

FY	SHIP TYPE	FY	ETC

FY PY	OND J F M A M J J A S	FY	OND J F M A M J J A S
Hull 1			
2			
3 etc			
FY CY			
Hull 1			
2			
3 etc			

This exhibit will be prepared for each ship type in the budget year request. The contract award date and start of construction and delivery dates will be included in bar chart form for each of the hulls in the budget year and for each of the ships of this ship type in the Five Year Defense Plan. If the ship type in the budget year has been procured in preceding fiscal years, the chart should indicate the same schedule data for the undelivered prior year ships.

Where applicable, foreign military sales should be included and the production schedules for all ships should be structured to indicate if we are planning to construct them in more than one shipyard or if the budget year and future year ships will be follow-on to existing production contracts.

FY BY +1	
Hull 1	
2	
3 etc	
FY BY +2/+3/+4/	
each by Hull	

SHIPBUILDING AND CONVERSION, NAVY

TEST AND EVALUATION SCHEDULES

FY _____	SHIP TYPE _____	FY _____	FY _____	FY _____	ETC
<u>Ship/Item</u>	ONDJFMAMJJAS	ONDJFMAMJJAS	ONDJFMAMJJAS	ONDJFMAMJJAS	ONDJFMAMJJAS

Lead Ship This exhibit will be submitted for each ship type in the budget request. The first item on the exhibit will reflect the contract award date, start of construction and delivery date of the budget year ship or the first ship in the budget year request if the request includes more than one ship of a class.

Propulsion

For the critical electronics, ordnance and propulsion components, the exhibit will provide the contract award and delivery dates for the test equipments and the OT&E period and service approval date for the equipment.

Fire Control System

If one or more Land Base Test Sites (LBTS) will be established for the ship or if they have been established for prior year increments of this program, the LBTS schedules will be presented on the exhibit. The exhibit will then include the contract award date, fabrication period, in plant testing period and delivery date to the LBTS of the LBTS equipment. It will also include the equipment installation schedule, integration period and start and complete of OT&E at the LBTS.

Radar

Guns

Missile Launchers

Close In Weapons System

Electronics Warfare Equip

Other Critical Ordnance

and Electronics Components

SHIPBUILDING AND CONVERSION, NAVY

OUTFITTING COSTS

Date:

<u>Ship</u> <u>Type</u>	<u>Hull</u> <u>Number</u>	<u>Program</u> <u>Year</u>	<u>Completion</u> <u>Date</u>	<u>Total</u> <u>Outfitting</u> <u>Cost</u>	<u>FY(PY)</u>	<u>FY(CY)</u>	<u>FY(BY)</u>
----------------------------	------------------------------	-------------------------------	----------------------------------	--	---------------	---------------	---------------

INSTRUCTIONS

This exhibit will list all ships by hull number for which outfitting funds are required in the past year, current year, or budget year.

EXHIBIT P-29

SHIPBUILDING AND CONVERSION, NAVY POST DELIVERY ESTIMATES

(\$ 000)

Date:

Ship Type & Hull No. (1)	Completion of Construction (CFO) (2)	Start and Completion Date of Post Delivery Availability (3)	Total Cost Estimate of Post Delivery Work (4)	FY(1Y) (5)	FY(2Y) (6)	FY(3Y) (7)	Shipyard Assigned, Post Delivery Work (8)	Major Items of Work (9)
--------------------------------	--	--	--	---------------	---------------	---------------	--	----------------------------------

INSTRUCTIONS

Columns (1) through (8) are self-explanatory. Column (9) should indicate the estimated number of man-days involved in actual Post Delivery period.

Summary information should be provided in the following format:

Shipbuilding and Conversion, Navy

Summary of Post Delivery Costs

FY(1Y)	FY(2Y)	FY(3Y)
--------	--------	--------

FLM Ships

AAM Ships

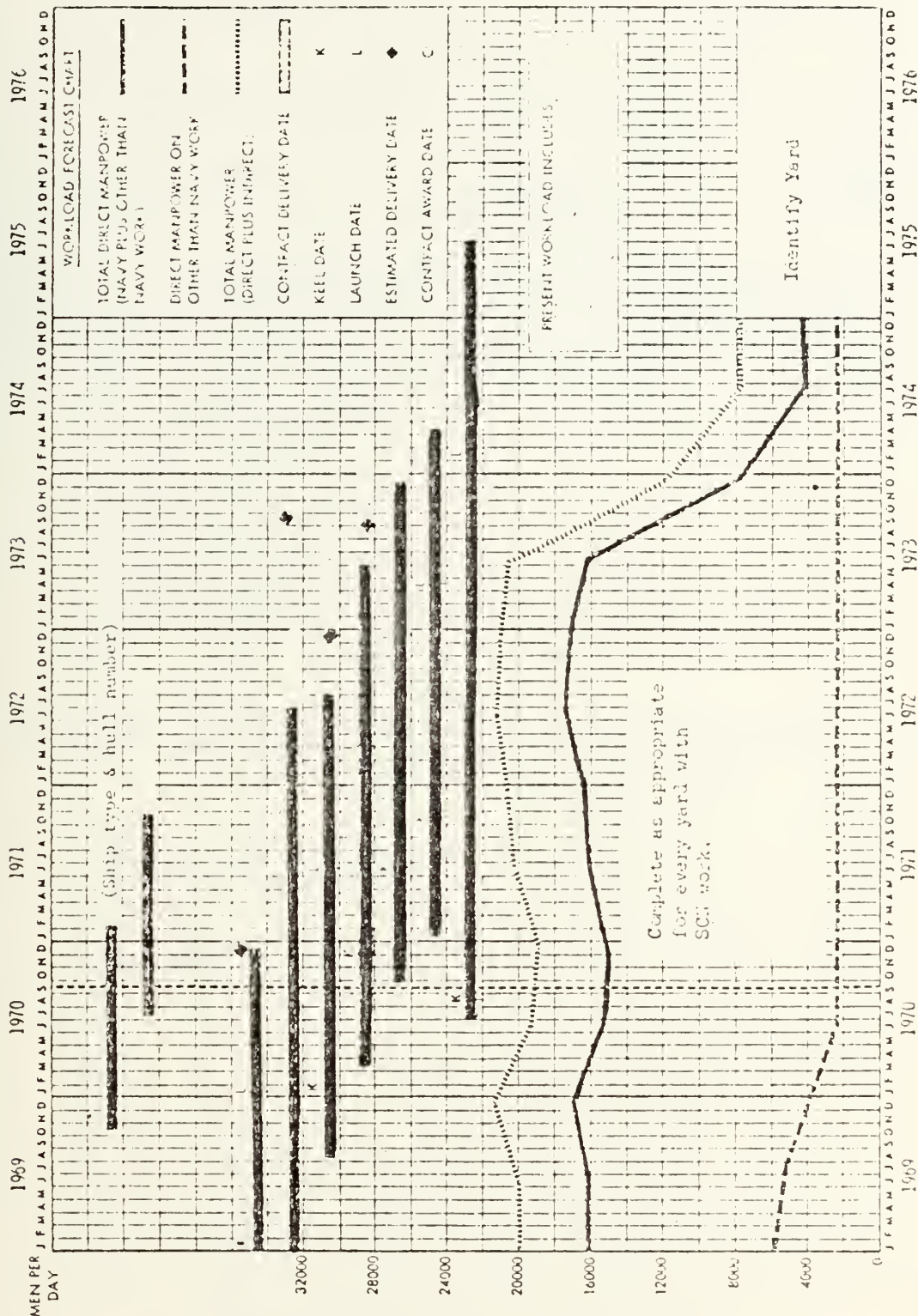
ASW Ships

Etc.

EXHIBIT P-30

SHIPBUILDING AND CONVERSION, NAVY

WORKLOAD DATA



SHIPBUILDING AND CONVERSION, NAVY

COMPONENT LEADTIME AND INSTALLATION SCHEDULE

FY _____ SHIP TYPE _____

<u>Component/Milestone</u>	<u>Leadtime</u>		<u>Installation</u>
	<u>Admin</u>	<u>Production</u>	<u>Date</u>

This exhibit will be submitted for each ship type in the budget year request. The installation dates and milestones will be based on the first ship in the budget year request if that request includes more than one ship of a class. The exhibit will include the installation dates and leadtime data for the following items:

- Propulsion machinery
- Principal radars
- Sonar
- Fire Control Systems
- Guns
- Close In Weapons Systems
- Missile Launchers
- Other significant electronics or ordnance items

In addition, the following data should be presented for the first ship in the budget year request.

- Contract award
- Start of construction
- Launch
- Start of test and checkout
- Delivery

[EXHIBIT P-42]

APPENDIX B

Index of Current SCN Cost Categories

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	113	Construction Plans (Drawings), Change Orders
	211	Basic Construction/Conversion Costs (Contract/ Project Order)
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	213	Rehabilitation
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	418	NAVSEC - Electronics Production Components
	429	NAVSEC - Electronics Engineering Services
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*	419	NAVELEX - Electronics Production Components
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Note	Cost Category	Description
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*	529	Small Boats Procurement
	533	H/M/E Stock Spares
	541	H/M/E Test & Instrumentation
	543	H/M/E Engineering Services
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*	825	In-House Services, Other than by NAVSEC
***	828	Deficit for Cancelled Ships
+	829	NAVSHIPS Undistributed Costs
		<u>Outfitting Material: OSA Reimbursable NSA/DSA Outfitting</u>
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<u>Note</u>	<u>Cost Category</u>	<u>Description</u>
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*	912	Ordnance Procurement Other than by NAVORD
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	922	ESO - APA Ordnance Outfit Material (4N)
	923	NAVORD Post Delivery
+	929	NAVORD Undistributed Costs
	9911	NAVORD Projected Growth
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	932	ASO - APA (2R, 4R) Aeronautical Outfit Material
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		<u>Strategic Systems Project Office (SSPO)</u>
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	915	SSPO - Outfit Material
	918	SSPO - Post Delivery
	9913	SSPO - Ordnance Projected Growth
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	463	ESO/APA Electronic Outfit (2N, 4G)
	562	SPCC - APA H/M/E Outfit (2H)
	568	BUMED Medical & Dental Allowance (9L)
	921	SPCC - APA Ordnance Outfit (2A)
	922	ESO - APA Ordnance Outfit (4N)
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		<u>Statistical Costs - APA Outfitting Material Issues</u>
	466	ESO/APA Electronics Outfit (2N, 4G)
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	966	SPCC/APA Ordnance Outfit (2A)
	967	ESO/APA Ordnance Outfit (4N)
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<u>Note</u>	<u>Cost Category</u>	<u>Description</u>
		<u>Spanish Program Use Only (No Changes)</u>
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	832	Spare Parts
	833	Ammunition
	834	Vendor Engineering Services (Contr)
	839	Ships Trials
	841	Equipment
	842	Spare Parts
	843	Vendor Engineering Services (Shore)
	851	Ship Systems Services
	852	US Tech. Asst. - Salaries
	853	US Tech. Asst. - Travel
	854	US Tech. Asst. - Tech. Services
	855	Training
	856	US Transportation - 2nd Destination
	857	Storage
	858	Packing and Crating
	859	Material Handling
		<u>Reserved For Special Headquarters Budget Purposes</u> <u>(Not To Be Used On Accounting Documents)</u>
	1111	Future Characteristics Changes
	1112	Future Delivery Charges
	2291	Escalation Growth
	4414	Electronics Growth
	5311	Change Order Growth
	5511	Other Growth
	9911	NAVORD Projected Growth
	9913	SSPO - Ordnance Projected Growth
	9931	NAVAIR Projected Growth

- - - - -		
Note:	*	New cost categories for budget and accounting use.
	**	Retained for historical purposes only; not for further use except for adjustments.
	***	For special budget estimating use only; not to be used in accounting system documents.
	#	Retitled description for category previously used for other purposes.
	+	For accounting system use only.

APPENDIX C

Definition of Cost Categories (CC) "Shipbuilding and Conversion, Navy"

PLAN COSTS (100 Series)

CC

111 Construction Plans (Drawings)

Includes the cost of preparing working designs from contract plans and specifications, plus the cost of the preparation of additional design information and technical data applicable to the ship project. Also included in this cost category are inclining data, damage control books, record plans, general information books, instruction books not associated with individual components, and mock-ups used to facilitate resolution of design problems.

113 Construction Plans (Drawings) Change Orders

Includes the cost of authorized modifications of all items cited in cost category 111, above, handled through change order or supplemental agreement procedures.

BASIC CONSTRUCTION/CONVERSION COSTS (200 Series)

211 Basic Construction/Conversion Costs (Contract/Project Order)

Identifies the original contract award price for constructing or converting a ship in a private shipyard, or the initial estimated cost for such work in a naval shipyard. Included also are those costs associated with the installation of government-furnished material onboard the new construction or conversion ship during the period preceding delivery. Costs specifically identified with other cost categories are not included within this definition.

212 Basic Cost Amendment

Includes those costs covered by amendments to the original contract award price or over the initial estimate (Cost Category 211, above) not accomplished through or covered by change orders (see cost category 311, below). The purpose for this category is to retain the visibility of the original award price in the SCN budget.

213 Rehabilitation

Includes the cost of rehabilitating the portions of a ship under conversion which are not directly affected by the conversion work itself. This is limited to work normally

performed during a ship's overhaul which does not affect the military characteristics of the ship.

215 Claims

Includes the cost of claims arising against the government for delays in delivery of government-furnished material or for other disruptions experienced under a ship construction or conversion contract or project order. This cost category excludes costs resulting from labor and material cost increases (escalation); these are covered under a separate cost category in this section.

223 Miscellaneous Basic Items

Includes those nonrecurring or special costs which are not part of the actual ship construction/conversion contract or project order, and are not specifically identified elsewhere in this section.

291 Escalation Paid

Includes commitments, obligations and expenditures earned and allowed for labor and material cost increases occurring during ship construction/conversion. Payments are based on the difference between the BLS index in effect at the time of the contract/project order award and the changing BLS index as work progresses. Funds are allotted to Supervisors of Shipbuilding for payment of escalation under supplementary agreements under ship contract escalation clauses. The cost of additional labor and material is not included. Project order holders will also delineate these costs.

293 Escalation Contingency

Includes projected requirements (based on the current BLS index) for work not yet physically completed, but anticipated to be paid under CC 291 under the provisions of the ship contract/project order. This cost category is to be used for budget purposes only at Command level, and is not for use in accounting system documents.

CHANGE ORDERS (300 Series)

311 Basic Change Order (HMR)

Includes those charges incurred for performing Headquarters Modification Requisition (HMR), i.e., Headquarters-initiated changes to specifications under a basic construction/conversion contract or project order.

312 Basic Change Order (FMR)

Same as above, but relating to Field Modification Requisition (FMR), i.e., Field-initiated changes.

321 Deferred Work Items

Items of work not accomplished under cost category 211, 213, 311, the need for which arises and are authorized prior to acceptance or underway trials but are accomplished during the post delivery period.

GOVERNMENT-FURNISHED MATERIAL--PARTICIPATING MANAGER (PARM) PROCUREMENT--ELECTRONICS (400 Series)/OTHER GFM (500 Series)

415 REWSON Production Components

Includes the cost of all REWSON Project (PARM: PME 107) service-approved major equipments directly procured by the PARM through contract or other financial documents, intended for installation aboard SCN ships.

416 REWSON--Test and Engineering Services

Reserved to identify and segregate test and engineering services related to REWSON equipment. Where costs are relatively minor, accounting costs may be assessed by PARM/SHAPM agreement to selected ship(s) in order to reduce administrative detail under the contract.

417 REWSON--Onboard Repair Parts

Reserved to identify and segregate the cost of contract procurement of repair parts or modules associated with subject equipment. Funding through contract action may be necessary where government supply systems are not yet involved in the support of the major components under procurement.

418 NAVSEC (Naval Ship Engineering Center)--Electronics Production Components

Includes the cost of all service-approved major electronics (2F cog) equipments, intended for installation aboard SCN ships, directly procured by the Naval Ship Engineering Center as PARM under contract or other financial documents.

419 NAVELEX (Naval Electronics System Command)--Electronics Production Components

Includes the cost of all service-approved major electronics (2Z cog) equipments, intended for installation aboard SCN ships, directly procured by NAVELEX as the PARM under contract or other financial documents.

428 SONAR--Electronic Production Components

Includes the cost of major ASW/SONAR electronics systems components, intended for installation aboard SCN ships, directly procured by PMS-302 as the PARM under contract or other financial documents.

429 NAVSEC--Electronic Test and Engineering Services

Reserved to identify and segregate engineering services and for training related to NAVSEC "2F" electronics component procurement. Where costs are relatively minor, accounting may be assessed by an agreement between the SHAPM and the PARM to selected ships in order to reduce administrative detail under contracts.

438 LHA Computer Programming Integration Center Costs

Includes all equipment/material costs incurred for LHA contractor use. Under the guidance of the NAVSHIPS representative, various testing and software programs are proceeding at Canoga Park, California.

439 NAVELEX--Electronic Test and Engineering Services

Reserved to identify and segregate test and engineering services and/or training related to NAVELEX--"2Z" electronics component procurement. Where costs are relatively minor, the accounting may be assessed by agreement between the SHAPM and the material manager to selected ship(s) in order to reduce administrative detail under contracts.

449 SONAR--Test and Engineering Services

Reserved to identify and segregate test and engineering services and/or training related to PMS-302 component procurement. Where costs are relatively minor, the accounting costs may be assessed by agreement between the SHAPM and the PARM to selected ship(s), in order to reduce administrative detail under contracts.

452 NAVSEC--Prototype Electronics

Includes the development and production of major prototype electronics hardware installed onboard SCN ships prior to service approval. No longer authorized for use; retained for historical record purposes only.

458 NAVELEX--Onboard Repair Parts

Reserved for identifying the cost to the government of NAVELEX contractor-procured onboard repair parts or modules related to a specific GFM component where direct ship delivery is specified. Funding is provided in special cases under the GFM contract where the supply system is not yet involved in the support of the major components under procurement.

462 SONAR--Onboard Repair Parts

Reserved to identify and segregate the cost of contract procurement of onboard SONAR repair parts or modules for new

construction or conversion ships. Funding through contract action may be necessary where government supply systems are not yet involved in the support of the major components under procurement.

463 ESO/APA Electronic 2N/4G Outfit Material

Reserved to identify the prefunding of ICP procurement or repair of APA 2N and 4G SCN outfitting material subsequently drawn from systems stock by the Outfit Supply Activity (OSA). Issues drawn are nonreimbursable and are statistically charged by specific ship under cost category 466 by the OSA's and reported monthly against the same outfitting allotment funding NSA/DSA outfitting requirements.

464 NAVSEC--Electronics Onboard Repair Parts

Includes the cost of contractual procurement of onboard electronic repair parts of modules for new construction or conversion ships. Funding through contract action is required only in those special instances where government supply systems are not yet involved in support of the components under procurement.

466 Statistical Costs--APA Material Issues (Outfitting)--
2N, 4G Material

Restricted to use to record OSA nonreimbursable 2N/4G issues of material; this is the statistical offset of CC 463.

469 NSA/DSA Electronics Material (OSA)

Reserved for funding under the NAVSHIPS allotments, those reimbursable NSA/DSA charges for electronics repair parts obtained by OSA to support NAVSHIPS, NAVELEX and NAVORD outfitting allowance items.

491 NAVELEX--Electronics (2Z) Material

Restricted to accounting use only, record as nonreimbursable "2Z" APA material "replacements" in instances where a determination has been made that direct SCN appropriation charges are inappropriate. Prior authorization is required at Command level where this cost category is used. The purpose is to avoid double charges for material items already funded under SCN but diverted to fill higher priority requirements.

492 NAVSEC--Electronics (2F) Material

Restricted to use to record a nonreimbursable "2F" APA material "replacement" issues in those instances where a determination has been made that direct SCN appropriation charges are inappropriate. Prior authorization is required at Command

level where this cost category is used. The purpose is to avoid double charges for items already funded by SCN but diverted to fill higher priority requirements.

511 Commanders Reserve

For special NAVSHIPS headquarters budget use only. Not to be used in accounting system.

513 SP Tender Load (1962 and Prior FBM Ships Only)

Retained for historical record purposes only, and not for further use. SP Tender Load is now funded under OPN.

521 H/M/E Propulsion Machinery

Includes the costs of procurement or manufacture of NAVSHIPS responsible installed propulsion machinery and components ("2S" cognizance) including nuclear equipment, components and cores. This cost category also includes the procurement of such machinery and components under the cognizance of other government agencies or activities handled through appropriation transfers, Economy Act Orders, or through allotments or requisition actions.

522 SHIPS Anti-Pollution

Includes those SCN costs associated with the Navy's pollution abatement program to improve the status of the act in connection with oil, sewage, air, noise and thermal pollution problems.

524 Special Vehicles

Reserved to identify requirements for special purpose automotive vehicles or equipment used aboard new construction or conversion ships.

525 H/M/E Hull, Mechanical and Electrical Equipment

Includes the cost of procurement or manufacture of major components classified as APA "2S" material. This cost category also includes the procurement of such equipment and components under the cognizance of other government agencies or activities handled through appropriation transfer, Economy Act Orders, or through allotment or requisition actions. This cost category excludes electronic, nuclear propulsion and prototype equipments and components costs.

526 H/M/E Prototype Equipment

Retained for historical record purposes only to record those prior year SCN charges incurred for the development and production of H/M/E prototype components installed or intended

for installation aboard new construction/conversion ships prior to service evaluation and acceptance. Not for further use.

527 H/M/E Deep Submergence Systems

Reserved to identify and segregate the procurement of components under the cognizance of the Deep Submergence Systems Project Office.

529 Small Boats Procurement

Reserved to identify and segregate the procurement of small boats for use aboard new construction/conversion ships, i.e., part of the SCN boat allowance.

533 H/M/E Stock Spares

Includes the cost to the government for procurement or manufacture of stock components or specific elements of major ("2S" cog) components for stock ashore, or onboard tenders/repair ships. Procurement of such components or elements is limited to an austere quantity since SCN is not an inventory appropriation. Stock repair parts generally procured by the Navy Stock Fund or procured for stock purposes by other appropriations are specifically excluded from this category.

541 H/M/E Test and Instrumentation

Includes the cost of testing or instrumentation incident to routine or special trials, generated by, or inherent to, qualifying a ship for active service. Any component tested shall be one intended to be installed onboard the SCN ship. Where there are several ships in a class to be tested, one ship in a "project" may be selected by the SHAPM to be assessed all charges.

543 H/M/E Engineering Services

Includes the cost of NAVSHIPS directed engineering services and/or training associated with hull, mechanical, electrical, propulsion, and nuclear components and equipment installed aboard ships. One ship may be selected to be assessed all charges at the option of the SHAPM.

561 SUPSHIPS/INDMAN Material/Services

Includes the cost of Supervisor of Shipbuilding responsible for GFM material indicated in Schedule A to be furnished to the contractor, and for any related service for SCN customer effort directed by the SHAPM through the SUPSHIP not covered by the Maintenance and Operation allotment funded annually

under O&MN. Funding is provided under an allotment established by NAVSHIPS on a per ship basis.

562 SPCC/APA H/M/E Outfit Material (2H)

Reserved to identify the prefunding of ICP (SPCC) procurement or repair of "2H" APA cog materials for outfitting new construction/conversion ships. Material issues are charged statistically by the OSA under CC 566 and reported monthly against the same NSA/DSA funding NSA/DSA outfitting requirements.

564 Commissioning Ceremony

Restricted to use to cover those costs directly related to the commissioning ceremony and not for use after this period. Reference should be made to NAVSHIPS Instruction 7303.71E for details on limitations on use of these funds.

565 H/M/E Onboard Repair Parts

Reserved for identifying the cost to the government in special cases of NAVSEC or SPCC procured onboard repair parts or modules related to a specific GFM component when direct delivery to a ship is required. Funding is provided under the GFM contract or through a specific SPCC allotment.

566 SPCC/APA H/M/E (2H) Outfit Material

Restricted to OSA use for recording "2H" APA material issues as nonreimbursable charges against the OSA allotment (by ship). Note this is the statistical offset of Cost Category 562.

568 BUMED Medical & Dental Allowance

Restricted to use for funding and recording actual charges under the annual NAVSHIPS funding provided BUMED for the medical allowance ("9L" cog) for new construction/conversion ships. Direct accounting by hull (UIC) is reported by BUMED on a quarterly basis to NAVSHIPS.

569 NSA/DSA H/M/E

Reserved for funding under the NAVSHIPS allotments those reimbursable NSA/DSA charges for other than electronics repair parts obtained by OSA to support NAVSHIPS, NAVELEX and NAVORD outfitting allowance items.

591 NAVSEC--H/M/E (2S) Material

Restricted to accounting systems use only to record as non-reimbursable "2S" APA material "replacements" in instances where

a determination has been made that direct SCN appropriation charges are inappropriate. Prior authorization is required at Command level where this cost category is used. The purpose is to avoid double charges for material items already funded under SCN but diverted to fill higher priority requirements.

611 Major Disasters, H/M/E Restoration

Includes the cost of restoring ships under construction (including the replacement and repair of installed equipment including electronics). Used only where the SHAPM so directs in accounting documents, subject to SHIPS 10 approval.

616 MAP Reimbursable--Alteration, Repair & Overhaul

Includes the cost of work and material necessary to accomplish alteration, repair, overhaul and other work on ships in the Military Assistance Program (MAP), funded under the SCN appropriation. Government-furnished material procured at Command level is not included.

626 MAP Reimbursable--Ordnance

Includes the cost of NAVORD responsible items procured for Military Assistance Program (MAP) ships, funded by NAVSHIPS under the SCN appropriation through direct allotment to the Navy Ordnance Systems Command.

712 Pre-Transfer Logistic Support (MAP)

Restricted for use to designate funding for subject costs for other than U.S. Navy ships where the SCN appropriation is cited.

713 Post-Transfer Logistic Support (MAP)

Restricted for use to designate funding for subject costs for other than U.S. Navy ships where the SCN appropriation is cited.

718 Post Delivery - Work List

Included are the cost of items of work on the INSURV work list and approved by the SHAPM for accomplishment during the period after delivery of the ship within the time limit prescribed by NAVSHIPS Instruction 7301.25 for the correction of defects and deficiencies. For convenience in reducing cost categories under this instruction, all post delivery work prior to FY 1970 is also included under this cost category.

811 Tools and Equipment

Includes the cost of specialized machine tools, apparatus, facilities and accessory equipment, the requirement for which has been created by the placing of new construction or conversion work in a public or private shipyard.

813 Accommodation Barges

Includes the cost of activation, maintenance, overhaul, alteration and inactivation of accommodation craft (APLs, APBs, etc.) used for berthing and messing of advance crews of ships under construction or conversion. The need for these accommodation barges arises where there are no nearby government quarters available for the advance crews. Also included under this category are costs associated with Facilities contracts administered by NAVFAC related to the placing of accommodation craft in a private shipyard.

814 Planned Maintenance Subsystem

Restricted to use for special advanced planning costs requested by the Ships Acquisition Project Manager (SHAPM) and associated with maintenance and servicing of major ships systems or subsystems.

815 Transportation--First Destination

Restricted to use as the single SCN source for reimbursement to the Navy Management Fund for the Cost of transporting SCN materials to their first destination point. Subsequent to 30 June 1969, requirements are budgeted under the annual SCN subhead for outfitting.

825 NAVSEC Tasks

Includes the cost of assigned engineering effort performed by NAVSEC personnel through customer funding arrangements by the SHAPM for tasks related to specific SCN ships or craft.

825 In-House Services, Other than NAVSEC

Includes the cost of assigned engineering effort performed by other than NAVSEC personnel where the SHAPM has elected to seek other means to accomplish specific tasks related to shipbuilding and conversion.

828 Deficit for Cancelled Ships

For Headquarters budget purposes only; to record as an offsetting entry those residual charges for cancelled ships where the budget authorization has been withdrawn, but accounting data has been officially recorded.

829 NAVSHIPS Undistributed

For Headquarters accounting use only to temporarily lodge unidentified charges appearing in the accounting records where further research is necessary.

911 NAVORD System Major Components

The general cost category covering procurement of all major NAVORD responsible material required for a new construction/conversion ship under the SCN programs. This category excludes outfitting and post delivery requirements, FY 1970 and subsequent, which are covered separately, and any other NAVORD cost category delineated below.

912 Ordnance Procurement, Other than NAVORD

To cover the costs where at the election of the SHAPM ordnance is procured outside the NAVORD procurement system.

913 SSPO--Ordnance Systems

SSPO use only. (Comparable to CC 911).

914 SSPO--ASW Interface

SSPO use only for procurement of ASW related items.

915 SSPO--Outfit Material

SSPO use only for annual requirements funded under SCN subheads administered by SSPO.

918 SSPO--Post Delivery

SSPO use only for annual requirements funded under SCN subheads administered by SSPO.

921 SPCC--APA Ordnance Outfit Material

Restricted to use, effective FY 1970, for recording charges to annual NAVORD funding provided SPCC for long-lead procurement or repair of "2A" APA cog materials for outfitting new construction/conversion ships. Issues are recorded statistically by OSA's (See CC 966) and reported monthly to NAVSHIPS.

922 ESO--APA Ordnance Outfit Material

Restricted to use, effective FY 1970, for recording charges to annual NAVORD funding provided ESO for long-lead procurement of "4N" cog material for outfitting new construction/conversion ships. Issues are recorded statistically by OSA's (see CC 967) and reported monthly to NAVSHIPS.

923 NAVORD Post Delivery

Restricted to use, effective FY 1970, for funding NAVORD annual SCN requirements for its area of cognizance under post delivery. Funding requested is provided by NAVSHIPS SHAPMs based on NAVORD specific request by individual hull.

929 NAVORD Undistributed

For Headquarters accounting use only for temporarily accommodating unidentified charges under a ship project, pending research to determine the actual ship involved.

931 NAVAIR Systems

The general cost category covering procurement of all NAVAIR-responsible materials required for a new construction/conversion ship under the SCN programs.

932 ASO-APA Aeronautical Outfit Material

Restricted to use, effective FY 1970, for recording charges to annual NAVAIR funding provided to ASO for long-lead procurement of "2R/4R" cog materials for outfitting new construction/conversion ships. Issues are recorded statistically by OSA's (See CC 968) and reported monthly to NAVSHIPS.

966 SPCC/APA Ordnance (2A) Outfit Material

Restricted to OSA use for recording all "2A" APA cog material issues as statistical charges against the OSA allotment (by ship). Note this is an offset to direct ICP support by NAVORD (See CC 921).

967 ESO/APA Ordnance (4N) Outfit Material

Restricted to OSA use for recording "4N" APA cog material issues as statistical charges against the OSA allotment (by ship). Note this is an offset to direct ICP support by NAVORD (See CC 922).

968 ASO/APA Aeronautical (2R, 4R) Outfit Material

Restricted to OSA use for recording all 2R/4R cog material issues as statistical charges against the OSA allotment (by ship). Note this is an offset to direct ICP support (See CC 932).

1111 Future Characteristics Changes

Reserved for Headquarters budget purposes only, where CNO approval is requested, in those instances where increased costs are due to characteristics changes.

1112 Future Delivery Changes

Reserved for Headquarters budget purposes only where a CNO determination of change in delivery point must be funded for a ship or craft under construction or conversion.

2291 Escalation Growth

Reserved for Headquarters budget purposes only to cover potential growth in anticipated earned escalation.

4414 Electronics Growth

Reserved for Headquarters budget use only to cover anticipated growth in the cost of electronics components.

5311 Change Order Growth

Reserved for Headquarters budget use only to cover anticipated growth in projected escalation requirements.

5511 Other Growth

For Headquarters budget use only to cover anticipated ship cost growth at some future time.

9911 NAVORD Projected Growth

Reserved for NAVORD Headquarters budget purposes only. Reserve for anticipated future growth costs associated with NAVORD responsible material.

9913 SSPO--Ordnance Projected Growth

Reserved for SSPO use only. (Comparable to CC 9911).

9931 NAVAIR Projected Growth

Reserved for NAVAIR Headquarters budget purposes only. Reserve for anticipated future growth costs associated with NAVAIR-responsible material.

APPENDIX D

Program/Fund Allocation (NAVCOMPT Form 2058) and Apportionment and Reapportionment Schedule (DD Form 1105)

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STANDARD DOCUMENT NUMBER
N60012 77 CT 0N566 03

IN THOUSANDS

ADATE: 09/24/76

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192

1832

DEPARTMENT OF NAVY

PROGRAM/FUND ALLOCATION - CHANGE TRANSMITTAL

NAVCOMPT FORM 20SR-CT 6-72(UNAF1)

IN DOLLARS

RESPONSIBLE OFFICE	1 APPROPRIATION TITLE AND YEAR	1 APPROPRIATION SYMBOL	1 SERIAL NUMBER
1 CHIEF OF NAVAL OPERATIONS	1 SHIPBUILDING AND CONVERSION, NAVY	1 17 75/79 1811	1 77 CT 0N506 03

ROUTE: 09/24/76

ENCLOSURE PAGE

TRANSSECTION CODES:

- A NAVCOMPT RESERVE - UNIFIED CHANGE
- B NAVCOMPT RESERVE - OTHER CHANGE
- C ABOVE THRESHOLD REPROGRAMMING CHANGE
- D BELOW THRESHOLD AUTHORITY CHANGE
- E TRANSFER CONTROL
- F SUPPLEMENTAL APPROPRIATION CHANGE
- G OTH RESERVE CHANGE
- H ANTICIPATED PROGRAM REDUCTION CHANGE
- I RESOURCES AVAILABLE FOR REPROGRAMMING CHANGE
- J CHARGES AFFECTING CONGRESSIONAL ACTION
- L PROGRAM CHANGES, MINOR

A/ SUBJECT TO THE LIMITATION PROVISIONS OF SUBSECTION C, SECTION 3679 R.S. AS AMENDED.

B/ THIS PROGRAM/FUND ALLOCATION IS ISSUED IN ACCORDANCE WITH FY 1977 APPROPRIATION SCHEDULE (DD 1105) SERIAL NO. 1. AMOUNTS ALLOCATED WILL BE SUBSEQUENTLY ADJUSTED BY AOB TO REFLECT ACTUAL UNOBLIGATED DIRECT AND REIMBURSABLE PROGRAMS AS REPORTED IN 30 SEPTEMBER 1976 REPORTS.

AGENCY		FUNDING AND CONVERSION, NAVY		COMPONENT NO. 1	
DEPARTMENT OF DEFENSE		17 AUG 1976		OIG NO. 1	
DESCRIPTION		AMOUNT LAST YEAR CO FUND 1105	SUBMITTED BY COMPONENT	RECEIVED BY SEC DEF	ACTION BY OIG
BUDGETARY RESOURCES					
BUDGET AUTHORITY					
1A APPROPRIATIONS REALIZED	-	-	-	-	-
1B OTHER NON AUTHORITY REALIZED	-	-	-	-	-
1C NET TRANSFERS OF CV AUTH REALIZED	-	-	-	-	-
1D ANTICIPATED RESOURCES	-	-	-	-	-
1 TOTAL BUDGET AUTHORITY	-	-	-	-	-
UNOBLIGATED BALANCE					
2A BROUGHT FORWARD OCTOBER 1 ESC.	-	1,124,142,030	1,124,142,030	1,124,142,030	1,124,142,030
2B NET TRANSFERS OF PY BALANCES	-	-	-	-	-
2C ANTICIPATED TRANSFERS OF PY BALANCES	-	-	-	-	-
2 TOTAL UNOBLIGATED BALANCE	-	1,124,142,030	1,124,142,030	1,124,142,030	1,124,142,030
REIMBURSEMENTS AND OTHER INCOME					
3A EARNED	-	-	-	-	-
3B CHANGE IN UNFULFILLED CUSTOMER ORDERS	-	-	-	-	-779,150,000
3C ANTICIPATED FOR REST OF YEAR	-	-	-	-	-
3 TOTAL REIMBURSEMENTS AND OTHER INCOME	-	-	-	-	-779,150,000
RECOVERIES OF PRIOR OBLIGATIONS					
4A ACTUAL RECOVERIES	-	-	-	-	-
4B ANTICIPATED RECOVERIES REST OF YEAR	-	-	-	-	-
4 TOTAL RECOVERIES OF PRIOR OBLIGATIONS	-	-	-	-	-
5	-	-	-	-	-
6 RESTORATIONS (+) AND WRITE OFFS (-)					
6	-	-	-	-	-
7 TOTAL BUDGETARY RESOURCES	-	1,124,142,030	1,124,142,030	1,124,142,030	304,992,030
APPLICATION OF BUDGETARY RESOURCES					
APPORTIONMENTS OBLIGATIONS INCURRED					
8A	-	1,124,142,030	1,124,142,030	1,124,142,030	-
8B	-	-	-	-	-
8C	-	-	-	-	-
8D	-	-	-	-	-
8E	-	-	-	-	-
8F	-	-	-	-	-
8G	-	-	-	-	-
8 TOTAL APPORTIONMENTS	-	1,124,142,030	1,124,142,030	1,124,142,030	1,124,142,030
RESERVES					
9A FOR DEFERRAL	-	-	-	-	-
9B FOR RESCISSION	-	-	-	-	-
9 TOTAL RESERVES	-	-	-	-	-
10 UNAPPORTIONED BALANCE	-	-	-	-	-
11 TOTAL BUDGETARY RESOURCES	-	1,124,142,030	1,124,142,030	1,124,142,030	304,992,030
9/ Estimated unobligated balance as of 30 September 1975.		FOR OIG USE ONLY			
		1/ Amounts apportioned are automatically adjusted by the difference between the estimated and the actual unobligated balance brought forward (+ or -).			
SUBMITTED TO OIG (Date)		DATE			
17 AUG 1976		17 AUG 1976			
APPROVED BY (Signature)		APPROVED BY (Signature)			
17 AUG 1976		17 AUG 1976			
APPROVED BY (Signature)		APPROVED BY (Signature)			
17 AUG 1976		17 AUG 1976			

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